RESPONSE

OF

UNITED PARK CITY MINES COMPANY

TO

QUESTIONS 10 THROUGH 19

OF

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY'S

NOVEMBER 23, 1987,

REQUEST FOR INFORMATION

Volume 2

Submitted: January 15, 1988

United Park City Mines Company reserves the right to supplement this response as additional information and documents become available.

United Park City Mines Company

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to
January 15, 1987 Response

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United Park City Mines Company

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January 15, 1987 Response
Continued

Response of United Park City Mines Company, 01/15/88

QUESTION 15

Please provide any existing technical or analytical information United Park City Mines may have about the site, including but not limited to data and documents (except for EPA Analytical Results Report) related to soil, water (ground or surface), geology, hydrogeology or air quality on and about the site.

RESPONSE

The following is a list of the available technical or analytical information United Park City Mines Company has about the Site. This information, in some instances, has been generated by Lessees or operators of United Park City Mines Company's property or their consultants. **United Park City Mines Company does not necessarily agree with some of the findings of some of the consultants and reserves the right to comment upon those findings at a future time.**

1. Letter from United Park City Mines Company, to Ecology and Environment, Inc. dated July 18, 1985 concerning the depth of the ground water monitoring wells in toe of tailings dam and amount of tailings in the pond. Exhibit 15-A.

2. Analytical results of sample splits given to United Park City Mines Company by Ecology and Environment, Inc. Samples were taken during the summer of 1985. Exhibit 15-B.

3. EPA Site Inspection Report dated 8/27/85 and cover letter from Kelcey Y. Land dated 1/06/86. Exhibit 15-C.

4. EPA Air Sampling Plan for Richardson Flat Tailings Park City, Utah dated 6/15/86. Exhibit 15-D.

5. Site Inspection Report submitted to EPA by Utah State Division of Environmental Health, Bureau of Solid and Hasardous Waste dated 8/30/84. Exhibit 15-E.

6. Report On Tailings Pond Investigation Near Park City, Utah For Noranda Mining Inc. by Dames and Moore dated November 12, 1980. Exhibit 10-D

Continued on next page

7. Report Of Embankment And Dike Design Requirements Proposed Tailings Pond Development Near Park City, Utah for Park City Ventures Corporation by Dames and Moore dated March 8, 1974. Exhibit 10-C.

8. Report Of Ground Water Monitoring And Seepage Study Tailings Pond Development Near Park City, Utah For Park City Ventures by Dames and Moore dated 12/6/73. Exhibit 10-A.

9. Computer printout of the section of United Park City Mines Company's Water Quality Data Base that contains information concerning NPDES monitoring of the ground water wells, Silver Creek and the Pond diversion ditch. This contains only the information generated by United Park City Mines Company and not information generated by Park City Ventures or Noranda Mining Inc. Exhibit 15-F.

10. An assay report on a selective grab sample of tailings taken from the Site to see if the mill tailings met requirements for smelter flux. No answer has yet been recieved from the smelter on the assay report. Exhibit 15-G.

11. Memorandum by the Bureau of Environmental Health, Division Of Health, State Of Utah dated May 2, 1973 concerning a site inspection to the proposed location for the Park City Municipal Landfill. This memo discussed the results of same trenching at the Landfill site. Exhibit 15-H.

12. Letter from Park City Municipal Corporation to the Utah State Department of Health and Sanitation dated April 10, 1973 concerning the Landfill, its operation, ground water and surface water drainage. Exhibit 15-I.

13. Geological Reconnaissance Of The Proposed Park City Summit County Sanitary Landfill Site, a Utah Geological and Mineralogical Survey Publication number 69 dated 9/27/72. Exhibit 15-J.

14. United Park City Mines Company internal memorandum

Continued on next page

dated 6/4/85 entitled "Park City Municipal Corporation Noncompliance With Certain Terms And Conditions Regarding The Operation Of Their Sanitary Landfill". This memo contains information concerning materials in and around the Landfill. Exhibit 15-K.

15. United Park City Mines Company internal memorandum dated June 11, 1985 concerning the reclamation of the Park City Landfill. Exhibit 15-L.

16. United Park City Mines Company internal memorandum dated July 10, 1985 concerning Prospector Square Mill Tailings disposal in the Park City Landfill. Exhibit 15-M.

17. A topographic map of the site constructed by Noranda Mining, Inc. in conjunction with their study of the pond. This is the most up-to-date topography available of the site. It was flown in 1980 and has not changed significantly since that time. Exhibit 15-N.

18. United Park City Mines Company internal memorandum dated October 9, 1985 regarding groundwater monitoring wells around Landfill. Exhibit 15-O.

19. United Park City Mines Company letter to Park City Municipal Corporation dated December 22, 1985 regarding Landfill Reclamation. Exhibit 15-P.

United Park City Mines Company reserves the right to supplement this response as additional information and documents become available.

EXHIBIT 15-A

UNITED PARK CITY MINES COMPANY
309 KEARNS BUILDING
SALT LAKE CITY, UTAH 84101

July 18, 1985

Mr. Jeffrey A. Holcomb
Ecology and Environment, Inc.
4105 East Florida Avenue
Suite 350
Denver, Colorado 80232

Dear Mr. Holcomb:

As per our telephone conversation of July 12, 1985, I have determined the present depths of each of the monitoring wells located along the toe of the containment dam for the tailings pond at Richardson Flat. The information is on the attached map.

As I mentioned on the telephone, it would be rather difficult to determine the exact amount of tailings in the Richardson Flat area. The area was used by various mining companies prior to the incorporation of United Park City Mines Company in 1953. United Park has not operated a mill in the area at any time since its incorporation. The most recent use of the area for tailings disposal was during the period of time from 1975 to 1981. During this time United Park had all of its mining properties leased to either Park City Ventures or Noranda Mining Incorporated. These companies constructed and operated milling facilities on United Park's property.

After a review of Park City Ventures' and Noranda's production data, I found that it would take a very detailed study of a variety of mining and milling data to determine, as accurately as possible, the amount of tailings disposed of by these companies.

As I mentioned an approximation of the total amount of tailings in the area could be made by doing some very general surface mapping and volume calculations. If you decide you would like to do this, let me know and I will assist you all that I can.

As of this writing I have not heard from your field crews regarding the drilling in the area. I am still awaiting any word as to the start of that project.

Sincerely,

Kerry C. Geer
Geologist/Engineer

KCG:jl

cc: E. L. Osika, Jr.
Reed V. Clawson
S. Hull

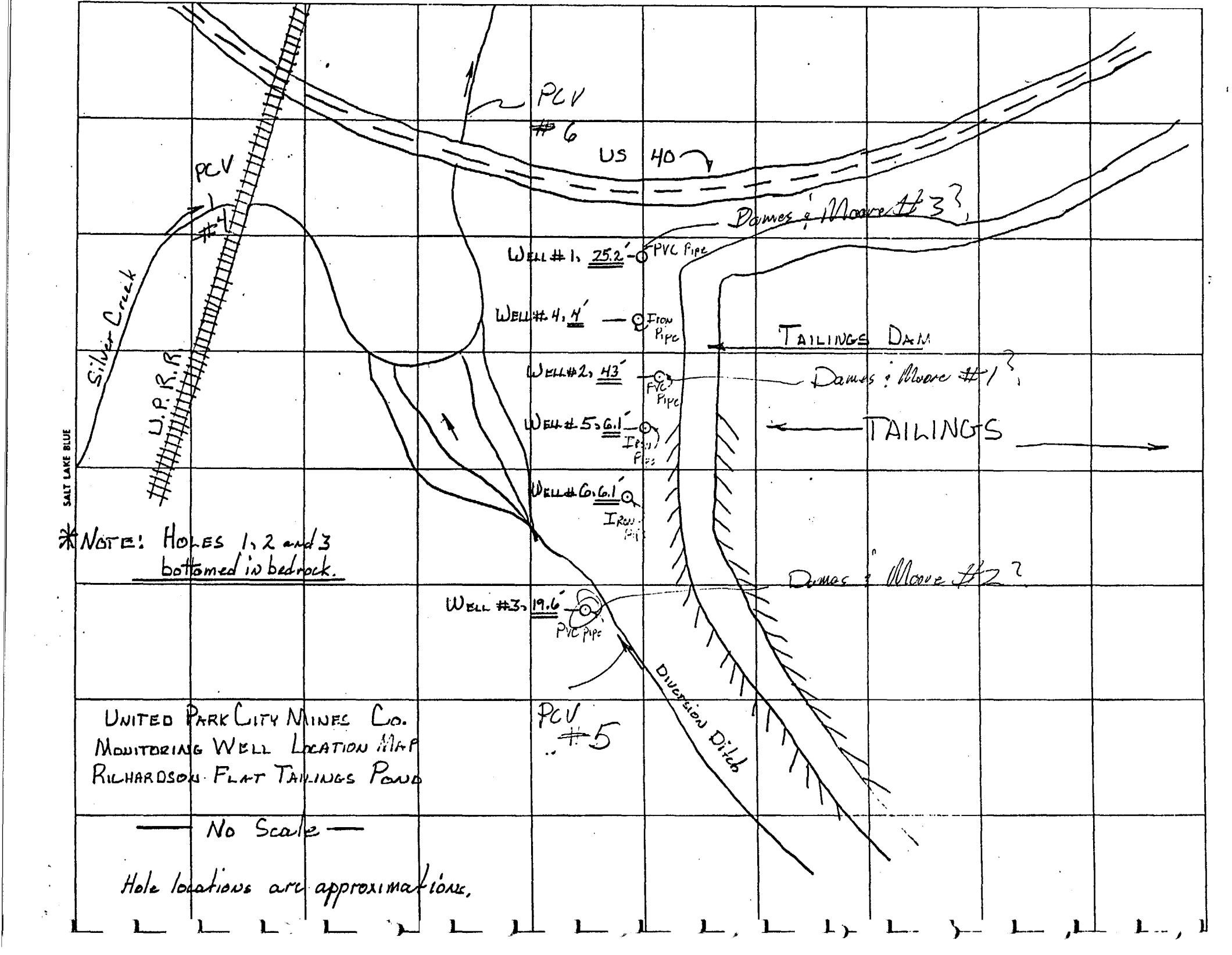
PCV #6
US 40
PCV #4
Silver Creek
U.P.R.R.
SALT LAKE BLUE
Dames & Moore #3?
WELL #1, 25.2' — PVC Pipe
WELL #4, 4' — Iron Pipe
TAILINGS DAM
WELL #2, 43' — PVC Pipe
Dames & Moore #1?
WELL #5, 6.1' — Iron Pipe
TAILINGS
WELL #6, 6.1' — Iron Pipe
* NOTE: HOLES 1, 2 and 3 bottomed in bedrock.
Dames & Moore #2?
WELL #3, 19.6' — PVC Pipe
Diversion Ditch
PCV #5
UNITED PARK CITY MINES CO.
MONITORING WELL LOCATION MAP
RICHARDSON FLAT TAILINGS POND
— No Scale —
Hole locations are approximations.

EXHIBIT 15-B

AMERICAN ENVIRONMENTAL CONSULTANTS

October 10, 1985

Mr. Kerry Gee
United Park City Mines
309 Kearns Building
Salt Lake City, Utah 84101

Dear Sir:

Please find attached the results for the splits of water and tailings samples taken in conjunction with the EPA's study. The samples were digested in a nitric perchloric acid mixture and analyzed for the parameters listed on the laboratory services request form.

If you have any questions concerning the attached data, please let me know.

Very truly yours,

Gary R. Stanga

Gary R. Stanga
Manager of Environmental
Laboratory Services

GRS/lb
Attach.

3422 South 700 West Salt Lake City, Utah 84119 (801) 262-7946

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Soil & Vegetation Sample Results

DATE RECEIVED 8/ 8/85
DATE REPORTED10/ 8/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Ag ppm	Al ppm	As ppm	Ba ppm	Be ppm
1046	RT-1 5- 7 Feet	8/ 1	1.5	27000.	6.0	150.	<5.0
1047	RT-1 10-12 Feet	8/ 1	1.0	36500.	<2.5	160.	<5.0
1048	RT-2 1- 3 Feet	8/ 2	20.	2250.	435.	40.	<5.0
1049	RT-2 3- 8 Feet	8/ 2	23.	1350.	546.	30.	<5.0
1050	RT-2 12-18 Feet	8/ 2	50.	2550.	471.	90.	<5.0
1051	RFTP 10-11 Feet	8/ 2	60.	3400.	576.	75.	<5.0
1052	RFTP 11-12 Feet	8/ 2	14.	2450.	312.	75.	<5.0

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	CN- ppm	Ca ppm	Cd ppm	Co ppm	Cr ppm
1046	RT-1 5- 7 Feet	8/ 1	<.20	5625.	<.50	30.	65.
1047	RT-1 10-12 Feet	8/ 1	<.20	6000.	<.50	25.	75.
1048	RT-2 1- 3 Feet	8/ 2		82500.	35.	33.	45.
1049	RT-2 3- 8 Feet	8/ 2		83750.	208.	29.	35.
1050	RT-2 12-18 Feet	8/ 2		42500.	92.	28.	50.
1051	RFTP 10-11 Feet	8/ 2		43750.	122.	31.	60.
1052	RFTP 11-12 Feet	8/ 2		87500.	79.	32.	40.

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Soil & Vegetation Sample Results

DATE RECEIVED 8/ 8/85
DATE REPORTED10/ 8/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Cu ppm	Fe ppm	Hg ppb	K ppm	Mg ppm
1046	RT-1 5- 7 Feet	8/ 1	30.	28250.	<.050	9125.	9375.
1047	RT-1 10-12 Feet	8/ 1	25.	28250.	<.050	9125.	10500.
1048	RT-2 1- 3 Feet	8/ 2	715.	82500.	1.0	685.	12750.
1049	RT-2 3- 8 Feet	8/ 2	425.	90000.	2.0	410.	14000.
1050	RT-2 12-18 Feet	8/ 2	535.	46250.	4.8	685.	15375.
1051	RFTP 10-11 Feet	8/ 2	685.	51250.	2.5	915.	14375.
1052	RFTP 11-12 Feet	8/ 2	240.	62500.	1.2	530.	10125.

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Mn ppm	Na ppm	Ni ppm	Pb ppm	Sb ppm
1046	RT-1 5- 7 Feet	8/ 1	740.	305.	70.	50.	<5.0
1047	RT-1 10-12 Feet	8/ 1	570.	295.	60.	25.	<5.0
1048	RT-2 1- 3 Feet	8/ 2	7000.	140.	105.	8000.	<5.0
1049	RT-2 3- 8 Feet	8/ 2	7500.	115.	90.	7100.	85.
1050	RT-2 12-18 Feet	8/ 2	2625.	205.	65.	7400.	50.
1051	RFTP 10-11 Feet	8/ 2	2625.	205.	65.	8900.	<5.0
1052	RFTP 11-12 Feet	8/ 2	5750.	170.	115.	3400.	<5.0

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Soil & Vegetation Sample Results

DATE RECEIVED 8/ 8/85
DATE REPORTED10/ 9/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Se ppm	Tl ppm	V ppm	Zn ppm
.046	RT-1 5- 7 Feet	8/ 1	<5.0	8.0	50.	70.
1047	RT-1 10-12 Feet	8/ 1	<5.0	8.5	65.	85.
1048	RT-2 1- 3 Feet	8/ 2	<5.0	30.	20.	6550.
1049	RT-2 3- 8 Feet	8/ 2	<5.0	28.	15.	34500.
1050	RT-2 12-18 Feet	8/ 2	<5.0	19.	15.	17550.
1051	RFTP 10-11 Feet	8/ 2	<5.0	19.	20.	23750.
1052	RFTP 11-12 Feet	8/ 2	<5.0	27.	15.	15050.

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Water Sample Results

DATE RECEIVED 8/ 7/85
DATE REPORTED 10/ 9/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Ag ppm	Ag(D) ppm	Al ppm	Al(D) ppm	As ppm
1040	MW-1a	8/ 2			9.7	<.020	.040
1041	MW-1b	8/ 2	<.010	<.010			
1042	MW-2a	8/ 2	<.010		1.0	<.020	.22
1043	MW-2b	8/ 2		<.010			
1044	RT-1a	8/ 2			.55	<.020	.005
1045	RT-1b	8/ 2	<.010	<.010			

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Ba ppm	Ba(D) ppm	Be ppm	Be(D)	CN- ppm
1040	MW-1a	8/ 2	.080	.070	<.020		
1041	MW-1b	8/ 2				<.020	<.004
1042	MW-2a	8/ 2	.080	.070	<.020		
1043	MW-2b	8/ 2				<.020	.087
1044	RT-1a	8/ 2	.070	.070	<.020		
1045	RT-1b	8/ 2				<.020	<.004

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Water Sample Results

DATE RECEIVED 8/ 7/85
DATE REPORTED 10/ 9/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Ca ppm	Cd ppm	Cd(D) ppm	Co ppm	Co(D) ppm
1040	MW-1a	8/ 2	196.	.008	<.002	.12	.060
1041	MW-1b	8/ 2					
1042	MW-2a	8/ 2	167.	.010	<.002	.15	.13
1043	MW-2b	8/ 2					
1044	RT-1a	8/ 2	31.	<.002	<.002	.020	.020
1045	RT-1b	8/ 2					

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Cr ppm	Cr(D) ppm	Cu ppm	Cu(D) ppm	Fe ppm
1040	MW-1a	8/ 2	.080	.070	1.5	.012	24.
1041	MW-1b	8/ 2					
1042	MW-2a	8/ 2	.10	.080	.15	.008	19.
1043	MW-2b	8/ 2					
1044	RT-1a	8/ 2	.070	.070	.005	<.005	.52
1045	RT-1b	8/ 2					

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Water Sample Results

DATE RECEIVED 8/ 7/85
DATE REPORTED 10/ 9/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Fe(D) ppm	Hg ppb	K ppm	Mg ppm	Mn ppm
1040	MW-1a	8/ 2	.30	<.050	10.	77.	2.3
1041	MW-1b	8/ 2					
1042	MW-2a	8/ 2	13.	<.50	7.1	77.	10.
1043	MW-2b	8/ 2					
1044	RT-1a	8/ 2	.12	<.50	1.2	9.6	.020
1045	RT-1b	8/ 2					

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Mn(D) ppm	Na ppm	Ni ppm	Ni(D) ppm	Pb ppm
1040	MW-1a	8/ 2	.93		.37	.20	.27
1041	MW-1b	8/ 2		40.			
1042	MW-2a	8/ 2	9.6		.27	.23	.83
1043	MW-2b	8/ 2		50.			
1044	RT-1a	8/ 2	.020		.080	.070	.017
1045	RT-1b	8/ 2		18.			

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Water Sample Results

DATE RECEIVED 8/ 7/85
DATE REPORTED 10/ 9/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Pb(D) ppm	SO4 ppm	Sb ppm	Sb(D)	Se ppm
1040	MW-1a	8/ 2	<.017		<.020		.009
1041	MW-1b	8/ 2		544.		<.020	
1042	MW-2a	8/ 2	<.017		<.020		.009
1043	MW-2b	8/ 2		687.		<.020	
1044	RT-1a	8/ 2	.017		<.020		<.005
1045	RT-1b	8/ 2		24.		<.020	

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Sn ppm	Tl ppm	Tl(D)	V ppm	V(D)
1040	MW-1a	8/ 2					
1041	MW-1b	8/ 2	<1.0	.064	.040	.23	<.020
1042	MW-2a	8/ 2					
1043	MW-2b	8/ 2	<1.0	.050	.048	.020	<.020
1044	RT-1a	8/ 2					
1045	RT-1b	8/ 2	<1.0	.007	.003	<.020	<.020

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Water Sample Results

DATE RECEIVED 8/ 7/85
DATE REPORTED 10/ 9/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Zn ppm	Zn(D) ppm
1040	MW-1a	8/ 2		
1041	MW-1b	8/ 2	.48	.020
1042	MW-2a	8/ 2		
1043	MW-2b	8/ 2	2.4	.16
1044	RT-1a	8/ 2		
1045	RT-1b	8/ 2	.010	.010

AMERICAN ENVIRONMENTAL CONSULTANTS

August 5, 1985

Mr. Joe McPhie
United Park City Mines
Box 1450
Park City, Utah 84060

Dear Sir:

Attached are the results for the split samples collected in conjunction with the Richardson Flat Tailings study. The tailings samples were prepared for Pb, Zn, Mn and Cu by digesting two different aliquots in a $HNO_3/HClO_4/HF$ acid mixture and averaging the results of the replicate analyses. Bulk samples for Hg were subjected to a warm HNO_3 digestion prior to analyses. Two NBS standard reference materials (1648 and 1645) were prepared and analyzed along with the unknowns. Enclosed is a copy of the results of those analyses and the corresponding certified values. Water samples were analyzed in the normal manner using a $HNO_3/HClO_4$ acid mixture.

If you have any questions regarding the attached data, please let me know.

Sincerely,

Gary R. Stanga

Gary R. Stanga
Manager of Laboratory Services

GRS/lb
Attach.

3422 South 700 West Salt Lake City, Utah 84119 (801) 262-7946

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Solid Waste Sample Results

DATE RECEIVED 6/25/85
DATE REPORTED 8/ 2/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	CN- ppm	Cu ppm	Hg ppb	Mn ppm	Pb ppm
905	RT-SO-1 Upgradient Background	6/19	<.50	93.	.45	969.	1103.
906	RT-SO-4 S.E. Portion of Tailings	6/19	<.50	240.	1.5	1847.	3725.
907	RT-SO-5 Mid-Portion of Tailings	6/19	<.50	215.	2.2	2499.	3104.
908	RT-SO-6 W.S.W. Portion of Tailings	6/19	<.50	444.	.15	556.	13197.
909	RT-SO-7 Mid-Upper Tailings	6/19	<.50	1078.	.54	5463.	9444.

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Zn ppm
905	RT-SO-1 Upgradient Background	6/19	1427.
906	RT-SO-4 S.E. Portion of Tailings	6/19	6682.
907	RT-SO-5 Mid-Portion of Tailings	6/19	6272.
908	RT-SO-6 W.S.W. Portion of Tailings	6/19	6599.
909	RT-SO-7 Mid-Upper Tailings	6/19	4074.

Dates of Analysis: Pb, Zn, Mn, Cu - 7/26/85
CN^- - 7/29
Hg - 7/30

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Water Sample Results

DATE RECEIVED 6/25/85
DATE REPORTED 8/ 2/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Cu ppm	Hg ppb	Mn ppm	Pb ppm	SO4 ppm
910	RT-SW-1 Upstream Bckgrnd. Silver Creek	6/20	.018	.60	.80	.20	277.
911	RT-SW-2 Silver Creek by R.R. Tracks	6/20	.012	.50	.47	.11	236.
912	RT-SW-3 Keetly Junction Trussel	6/20	.24	2.6	1.7	7.4	225.
913	RT-SW-4 S.E.Tailings, Intermitt. Stream	6/20	.014	<.50	.60	.12	200.
914	RT-SW-5 Interm. Stream, 60' S. Road	6/20	.012	<.50	1.8	.075	641.
915	RT-SW-6 Interm. Stream, at Culvert	6/20	.012	.50	2.8	.058	798.
						.05	

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Zn ppm
910	RT-SW-1 Upstream Bckgrnd. Silver Creek	6/20	2.7
911	RT-SW-2 Silver Creek by R.R. Tracks	6/20	1.7
912	RT-SW-3 Keetly Junction Trussel	6/20	6.4
913	RT-SW-4 S.E.Tailings, Intermitt. Stream	6/20	.19
914	RT-SW-5 Interm. Stream, 60' S. Road	6/20	1.4
915	RT-SW-6 Interm. Stream, at Culvert	6/20	.82

Dates of Analysis: Pb, Zn, Mn, Cu - 7/25/85
Hg - 7/30/85
SO4 - 7/31/85

EXHIBIT 15-C

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
ONE DENVER PLACE — 999 18TH STREET — SUITE 1300
DENVER, COLORADO 80202-2413

JAN 6 1986

Ref: 8HWM-SR

Kerry Gee
United Park City Mines
309 Kearns Building
Salt Lake City, Utah 84101

Dear Mr. Gee:

Enclosed per your recent telephone request is a copy of the site inspection for the Richardson Flat site in Utah. Please contact me at 303-293-1532 if you have any questions regarding this report.

Sincerely,

Kelcey Yarbrough Land

Kelcey Yarbrough Land
Regional Project Manager
Superfund Program Section

Enclosure

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington, DC 20460

EPA Form 2070-13
[redacted]

Rich. Flats.

EPA

Potential Hazardous Waste Site

Site Inspection Report

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION
01 STATE: UT | 02 SITE NUMBER: UTD980952840

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Richardson Flat Tailings	~3.5 miles NE of Park City, Utah

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Park City	UT	84060	Summit	043	UT-03

09 COORDINATES: LATITUDE 40 40 50.__ | LONGITUDE 111 26 40.__

10 TYPE OF OWNERSHIP (Check one): ☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 6, 19, 85 * (MONTH DAY YEAR)

02 SITE STATUS: ☐ ACTIVE ☒ INACTIVE

03 YEARS OF OPERATION: Late 1960's | 1981 (BEGINNING YEAR | ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☒ B. EPA CONTRACTOR Ecology & Environment, Inc. (E&E) (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Susan Kennedy	Reclamation Biologist	E&E FIT 8	(303) 757-4984
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Eric Johnson	EPA Reg. Site Project Officer	EPA-Region 8	(303) 293-1519
Jeff Holcomb	Chemical Engineer	E&E FIT 8	(303) 757-4984
Tom Smith	Safety Officer	E&E FIT 8	(303) 757-4984
Wade Hansen	Geologist	Utah Dept. Env. Health	(801) 533-4145
Rob Smith Dave Tuesday	Chief Hydrogeologist Geochemist	E&E FIT 8	(303) 757-4984
13 SITE REPRESENTATIVES INTERVIEWED	**14 TITLE**	**15 ADDRESS**	**16 TELEPHONE NO**
E.L. Osika, Jr.	Vice President	United Park City Mines 309 Kearns Bldg, SLC, UT	(801) 532-4031
Kerry C. Gee	Geologist/ Engineer	same as above	(801) 532-4031
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT		varied

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Eric Johnson	EPA - Region VIII Denver	(303) 293-1519

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Susan Kennedy	EPA	E&E FIT 8	(303) 757-4984	8 27 85 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

* 6/19, 20/85
7/30, 31/85
8/1, 2/85

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
UT	0980952840

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [X] B. POWDER, FINES
- [ ] C. SLUDGE
- [X] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS
- [ ] D. OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS > 7 million

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] D. PERSISTENT
- [X] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS	Elevated	arsenic and Sodium, cyanide.	
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Heavy metals in tailings material; at least 7 million tons of tailings		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Arsenic	999	Surface impoundment (tailings)	1650	ug/g *
MES	Cadmium	999		56	ug/g
MES	Copper	999		435	ug/g
MES	Lead	999		538	ug/g
MES	Manganese	999		2280	ug/g
MES	Mercury	999		1.24	ug/g
MES	Nickel	7440-02-0		23	ug/g
MES	Silver	999		21	ug/g
IOC	Sodium	999		2998	ug/g
MES	Zinc	999		5353	ug/g
IOC	Cyanide	999		5.2	mg/g
	* Concentration figures are averages of 4 surface tailings samples (RT-SO-4, 5, 6 & 7). Total metals.				

Mg/L

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	None		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Ecology & Environment, Inc. files - raw data
Sampling Activities Report

EPA FORM 2070-13(7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: UT | 02 SITE NUMBER: UTD980952840

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: 8/2/85) ☐ POTENTIAL [X] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION
Groundwater samples from upgradient wells (RT-GW-2, RT-GW-3) were collected and analyzed. Dissolved metals analyses revealed elevated levels of arsenic, cobalt, iron, manganese, and zinc. A drinking water well, used as a back-up source for Park City residents, is located two and a half miles from the contaminated wells at Richardson Flat.

01 [X] B. SURFACE WATER CONTAMINATION — 02 [X] OBSERVED (DATE: 6/20/85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 878 — 04 NARRATIVE DESCRIPTION
Surface water samples from Silver Creek, collected downgradient of the site, contained elevated levels of lead. RT-SW-3 (downgradient) contained 1485 ug/l lead as compared to RT-SW-1 (upgradient) containing 147 ug/l lead. Arsenic levels were also elevated but not an order of magnitude higher than the upgradient sample.

01 [X] C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE:) [X] POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION
Air-borne tailings particles were observed during afternoon gusty winds on June 19, 1985. The EPA FIT did not conduct HIVOL air monitoring at Richardson Flat, however.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION
No recorded history -- fire and explosive conditions do not exist at the site.

01 [X] E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE:) [X] POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION
The site is not secured from public access or access by domestic livestock. On June 19 and 20, vehicles were observed driving near the tailings area along the access road. Sheep and cattle were observed walking on the tailings on June 19 and 20, 1985.

01 [X] F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: 8/2/85) ☐ POTENTIAL [X] ALLEGED
03 AREA POTENTIALLY AFFECTED: 640 (Acres) (RT-SS-6) — 04 NARRATIVE DESCRIPTION
Soil beneath the tailings contains elevated concentrations of antimony, arsenic, cadmium, copper, lead, magnesium, mercury, silver, sodium and zinc. Off-site surface soil (RT-SO-1) contained elevated levels of arsenic, cadmium, lead, mercury and zinc probably due to wind-blown tailings material.

01 [X] G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE:) [X] POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION
The Pacific Bridge well (located ~2.5 mi from the site) may potentially be affected by contaminants from Richardson Flat Tailings. The well is used only as a backup source to municipal water for Park City residents, with other sources available. Surface water from Silver Creek is not used for drinking water.

01 [X] H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE:) [X] POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION
The tailings are being leased by Mr. Ray Worthy to be used as backfill for sewer lines and road base. During FIT members observed heavy equipment operators dumping what appeared to be native soil on the tailings area.

01 [X] I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE:) [X] POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION
No recorded history of population exposure or injury, however, the site is not secured from public access or domestic livestock grazing.

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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: UT | 02 SITE NUMBER: 098095840

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 [X] J. DAMAGE TO FLORA — 02 [X] OBSERVED (DATE: 6/19/85) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Peripheral tailings support vegetation including Juncus sp., Salix sp. & Verbascum thapsus predominantly, but most of the tailings are denuded due to high levels of soluble salts and metals.

01 [X] K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) [X] POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
No apparent damage to area fauna. Two muskrats were observed swimming in the drainage ditch on site (near RT-SW-4). Fish in Silver Creek could potentially be affected by lead and arsenic being released from the tailings.

01 [X] L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) [X] POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
The possibility exists for metals to move through the food chain if 1) domestic livestock are feeding on local vegetation that has taken up and stored metals in edible portions of the plant, 2) if local populations of fish in Silver Creek are concentrating metals, and are eaten by other animals or man.

01 [X] M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
Tailings ponds are uncovered and therefore susceptible to gusty winds which carry fine-grain tailings material off-site. A dam constructed at the northeast end of the tailings prevents mass movement of solid material off-site.

01 [X] N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) [X] POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
The potential exists for damage to off-site property because the tailings material is allegedly being used as sewer line backfill and road base in the Park City area.

01 [X] O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) [X] POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
If tailings material is being used as sewer line backfill, the potential exists for sewer contamination by metals.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Dumping of native soil on to the tailings was observed by FIT members, but is under the supervision of United Park City Mines.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
No other hazards are known.

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)
Ecology & Environment, Inc. files - Log book, Sampling Activities Report
State of Utah DSHW Site Investigation & PA

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
UT	D980952840

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☒ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☒ A. SURFACE IMPOUNDMENT	> 1 million	tons
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER
- ☐ A. BUILDINGS ON SITE

None

06 AREA OF SITE
170 (Acres)

07 COMMENTS
Slurry, generated from milling activities, was piped to the Richardson Flat area and currently covers approximately 160 acres. The metal, sulfide, and carbonate-containing tailings material is presently a solid matrix. An ephemeral pond overlies a portion of the tailings.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.
A dam at the northwest extension of the tailings is the only form of artificial containment on site. The tailings material is uncovered, and no underlying liner is present.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS
The site is not secured from public access or domestic livestock grazing.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)
Ecology & Environment - files, logbook, Sampling Activities Report

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
UT	D980952840

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☒
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☒	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 2.5 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 4500

03 DISTANCE TO NEAREST DRINKING WATER WELL 2.5 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
20 (ft)	North	20 (ft)	60,000 (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

Pacific Bridge Well, within 3 miles of the site, it used as a backup municipal water source for the 4500 residents of Park City, Utah. The well, however has not been tapped since the summer of 1983.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS	☐ YES ☒ NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☒ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Silver Creek	☒	~300 ft. (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 0 NO. OF PERSONS	B. 8 NO. OF PERSONS	C. 95 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 1.9 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 2

04 DISTANCE TO NEAREST OFF-SITE BUILDING 1.9 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Park City, Utah is approximately 3.25 miles southwest of the site. The population fluctuates from 4500 to 10,000 during the winter ski season. The year-round permanent population is approximately 4500.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
UT	D980952840

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☒ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
60 (ft)	Unknown (ft)	7.74

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
-12 (in)	1.25 (in)	0-5 %	NNE	0-5 %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. NA (mi) OTHER: B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

NA (mi)

ENDANGERED SPECIES: No endangered species in park or city area

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. 3.5 (mi)	B. 3 (mi)	C. NA (mi)	D. adjacent to site 1/4 mi (mi) pastureland, hay

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Richardson Flat is a slight natural depression at the base of the Wasatch Range, adjacent to Silver Creek.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Ecology & Environment, Inc. files
Personal Communication w/ USFWS - Salt Lake City
Baker, C.M. Jr. 1970. Water Resources of the Heber-Kamas-Park City Area, North-Central, Utah. Utah Dept. of Nat. Res. Tech. Publ. No. 27.

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
UT	0980952840

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	EPA Region 8 Laboratory - Lakewood, CO	Rec'd 10/16/85
SURFACE WATER	6	" " " " " "	Rec'd 7/12/85
WASTE Tailings Surface	4	" " " " " "	Rec'd 7/12/85
WASTE Subsurface	4	EPA Region 8 Lab and Versar Inc, Springfield, VA	Rec'd 10/16/85
AIR			
RUNOFF			
SPILL			
SOIL Surface	1	EPA Region 8 Lab	Rec'd 7/12/85
SOIL Subsurface	2	EPA Region 8 Lab and Versar, Inc, Springfield, VA	Rec'd 10/16/85
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
pH	Groundwater samples ranged from 6.43 to 6.89 Surface water samples (Silver Cr., tailings ditch) ranged from 7.26 to 7.54
Temperature	Groundwater - 9.5°C to 11°C Surface water - 19°C to 20°C
Conductivity	Groundwater - 350 to 1450 µmhos/cm Surface water - 550 to 1400 µmhos/cm
volatile organics (HNu)	no readings greater than background
radiation	no readings greater than background

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF E&E FIT 8 files
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS E&E FIT 8 files

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Ecology & Environment, Inc. files - Logbook
Sampling Activities Report
Raw Data

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
UT	D980952840

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
United Park City Mines Co.		309 Kearns Bldg.		Salt Lake City	UT	84101

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE
NA						

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (If applicable: list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Ecology & Environment, Inc. files

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION
01 STATE: UT | 02 SITE NUMBER: 0980952840

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
United Park City Mines, Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
309 Kearns Bldg.	

05 CITY	06 STATE	07 ZIP CODE
Salt Lake City	UT	84101

08 YEARS OF OPERATION	09 NAME OF OWNER
	Same as above

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER
NA	

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Ecology & Environment, Inc. files

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
UT	D980952840

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
None	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
None			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Mr. Ray Wortey *			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
unknown			
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

* allegedly removes tailings material for use as sewer line back fill and roadbase

Ecology & Environment, Inc. files - letter from Dale Parker, Utah SHWC to Eric Johnson, EPA

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
UT	0980952840

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No recorded history

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☒ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
A dam was built at the northwestern extension of the tailings to contain the ponded water.

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
UT	0980952840

II PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Ecology & Environment, Inc. files

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
UT	080952840

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

- No agency enforcement action taken at this site.
- SI performed by State of Utah BSMW 12/21/84
- SI performed by EPA FIT 8 6,7 & 8/85

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Ecology & Environment, Inc. files

EPA FORM 2070-13 (7-81)

EXHIBIT 15-D

HAZARDOUS
SITE CONTROL
DIVISION

Remedial Planning/ Field Investigation Team (REM/FIT)

ZONE II

[redacted]

CONTRACT NO.
68-01-6692

CH2M HILL
Ecology &
Environment

AIR SAMPLING PLAN FOR
RICHARDSON FLAT TAILINGS
PARK CITY, UTAH

TDD R8-8605-12

EPA ID# UTD980952840

EPA PROJECT OFFICER: KELCEY LAND

E&E PROJECT OFFICER: HENRY SCHMELZER

REVIEWED BY: Karl Ford

SUBMITTED TO: KEITH SCHWAB, FIT-DPO
WILLIAM GEISE, REM-FIT COORDINATOR

DATE SUBMITTED: JUNE 9, 1986

DATE RESUBMITTED: JULY 15, 1986

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LIST OF FIGURES

LIST OF TABLES

AIR SAMPLING PLAN FOR
RICHARDSON FLAT TAILINGS
PARK CITY, UTAH
TDD #R8-8605-12

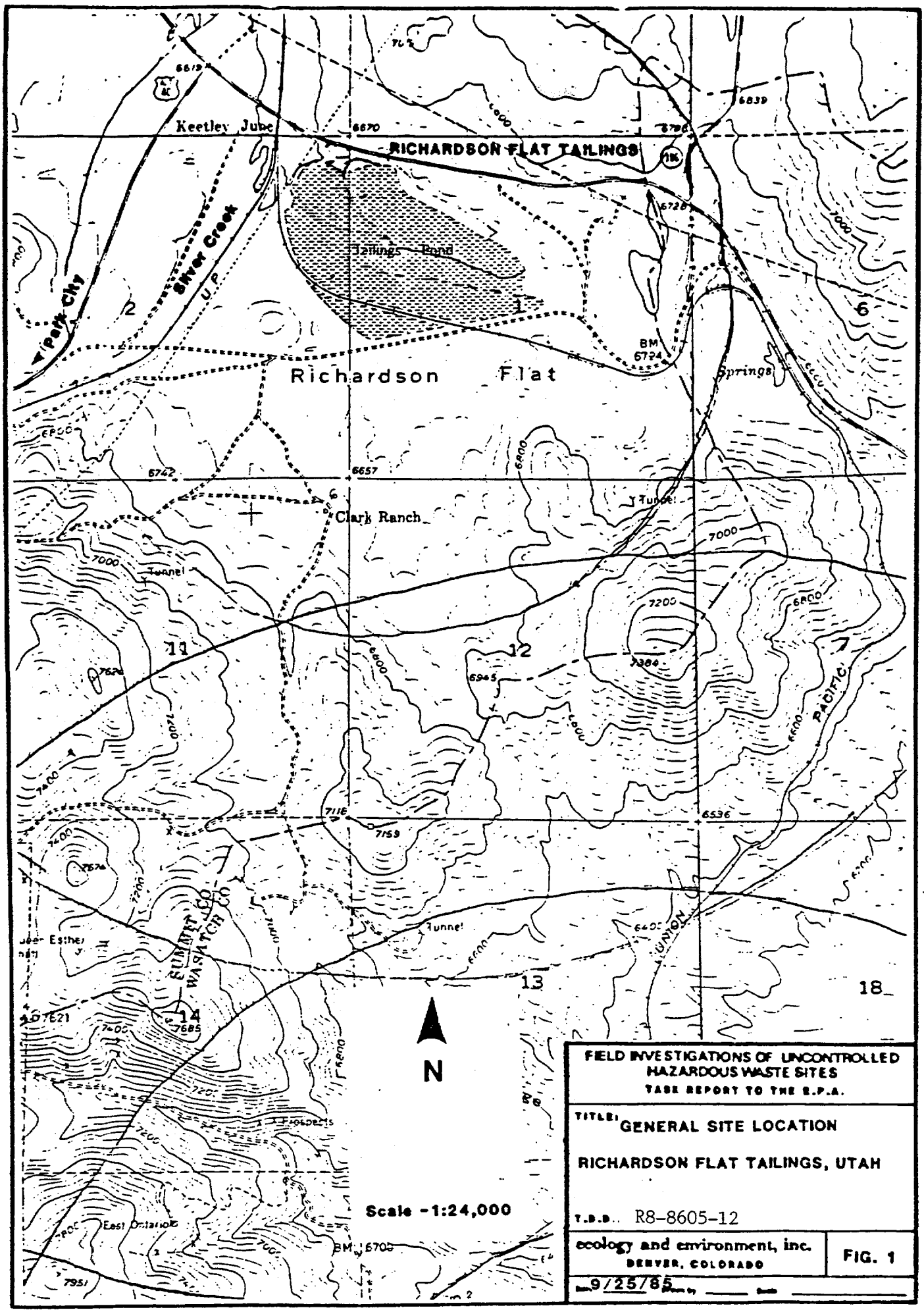
I. INTRODUCTION AND OBJECTIVES

Under the provisions of Technical Directive Document (TDD) R8-8605-12, Region VIII, U.S. Environmental Protection Agency (EPA) tasked Ecology and Environment, Inc. Field Investigation Team (E&E FIT) to prepare an air sampling plan for Richardson Flat Tailings, Park City, Utah (Figure 1).

This sample plan has been prepared to satisfy in part the requirements of the above referenced TDD and is designed to insure the objectives of the field investigation are met in a cost effective, timely and safe manner. This sample plan conforms to the requirements established in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II - Ambient Air Specific Methods; EPA - 600/4-77-027A, May, 1977; U.S. EPA, Research Triangle Park, N.C., 40 CFR Part 58, July, 1983, and the Region VIII FIT SOP for High Vol Air Sampling at Hazardous Waste Sites, prepared under TDD #R8-8408-02.

The overall scope of this project involves the set-up and operation of six high-volume air samplers at five pre-determined locations around the study area and collection of thirty samples for heavy metals and five samples for respirable particulate analysis over approximately a one week period. A summary of sample location, rationale and parameters to be measured is located in Table 1.

The objective of this investigation is to determine if air route migration of heavy metal contaminated suspended particulate matter exists, and to document such a release using quantitative air sampling techniques.



FIELD INVESTIGATIONS OF UNCONTROLLED HAZARDOUS WASTE SITES

TASK REPORT TO THE E.P.A.

TITLE: GENERAL SITE LOCATION

RICHARDSON FLAT TAILINGS, UTAH

T.D.D.: R8-8605-12

ecology and environment, inc.
DENVER, COLORADO

FIG. 1

9/25/85

TABLE 1
SAMPLE TYPES, PARAMETERS, LOCATIONS AND RATIONALES

Sampler Number	Location	Rationale	Parameters
RF-AM-01	0.5 miles south of site.	Distant background sample.	Arsenic, Cadmium, Lead & Zinc
RF-AM-02	East side of tailings area.	Document airborne contaminants blown to the east of the tailings.	Arsenic, Cadmium, Lead & Zinc
RF-AM-03	Same as RF-AM-02.	A duplicate of RF-AM-02 for quality control purposes.	Arsenic, Cadmium, Lead & Zinc
RF-AM-04	Northwest side of tailings area and southwest of the dam.	Document airborne contaminants blown to the northwest of the tailings.	Arsenic, Cadmium, Lead & Zinc
RF-AM-05	Same as RF-AM-04.	Document the respirable portion of the particulate fraction blown off-site from the tailings.	Arsenic, Cadmium, Lead & Zinc
RF-AM-06	Southwest side of tailings area.	Document airborne contaminants blown to the southwest of the tailings.	Arsenic, Cadmium, Lead & Zinc
Met	Between railroad tracks and south border of tailings.	Collect meteorological data during sampling activities.	Wind direction, wind speed, relative humidity and barometric pressure

II. SITE DESCRIPTION

Richardson Flat Tailings is located in Summit County, Utah approximately 3.5 miles northeast of Park City. The tailings cover approximately 160 acres in the NW 1/4, Section 1, Township 2 South, Range 4 East (Figure 1). Highway 40 runs east and north of the area, and a Union Pacific Railroad track bisects the southern portion of the tailings. Silver Creek is located approximately 500 feet from the northwestern most extension of the tailings. An intermittent stream (water diversion ditch) forms the southeastern border of the tailings. An ephemeral pond overlies the northeastern portion of the tailings, and is contained by a dam at the northwestern end.

III. SITE HISTORY

The mill tailings at Richardson Flat came from the Keetley Ontario Mine and other metal mines currently owned by United Park City Mines (UPCM). The most recent use of the area for tailings disposal was during the period of time from 1975 to 1981. During this time, UPCM had all its mining properties leased to either Park City Ventures or Noranda Mining, Inc. who constructed and operated milling facilities on UPCM property.

It is estimated that at least seven million tons of tailings were deposited on Richardson Flat. While there is no current dumping of tailings on site, Mr. Ray Wortley is leasing the tailings from UPCM to use for sewer line and road base backfill.

The site is not secured in any way from public access. An unpaved road along the southern boundary of the tailings is unrestricted. Cattle and sheep are grazed in the area, and cattle have been observed walking across the tailings.

IV. METEOROLOGY

The data presented in the following section was acquired from The Climatic Atlas of the United States, U.S. Department of Commerce, Environmental Sciences Services Administration, Environmental Data Service, June 1968. The climate of the Park City area is characterized by moderate fluctuations in temperature and precipitation throughout the year. Mean monthly temperatures range from 10 degrees Fahrenheit (°F) in December, January, and February to 80°F in June, July and August. During the month of July (for which this sampling trip is scheduled) the average temperature is approximately 60°F. Precipitation for the Park City area varies from a mean monthly amount of 1.00 inches in July to 2.22 inches in December. Prevailing wind direction at Park City is typically from a southeasterly direction throughout the year. The meteorological station will be operated at the site for two days prior to initiating sample collection. The data collected will be used to determine the primary wind direction at the site and to establish temperature and barometric pressure for calibration. Relative humidity for the Park City area varies from 40 percent in August to 80 percent in December and February. The average relative humidity in July is 50 percent. Barometric pressure ranges from 1022 millibars (30.18 inches of mercury) in December and January to approximately 1010 millibars (29.83 inches of mercury) in June.

On June 20, 1985, clouds of fugitive dust were photographed moving offsite as a result of strong winds from the west-northwest. In May, 1985, FIT observed the wind direction to be from the southwest. Results of analyses of surface tailings samples showed concentrations as high as 3,600 ppm arsenic, 80 ppm cadmium, 8,530 ppm lead, and 6,360 ppm zinc. Mean soil concentrations for those metals in the western U.S. respectively are 5.5 ppm, 0.2 ppm, 17 ppm, and 55 ppm.

The Richardson Flat tailings lie in a small flat topographic basin of approximately 800 acres which is drained by Silver Creek. The configuration of the basin is likely to have a pronounced effect on local air flow. The basin is situated at 6600 feet elevation and

is surrounded by ridges of the Wasatch Mountains that range from 6700 feet to 7600 feet. Silver Creek enters the basin from the west-southwest then angles to the north, hence an upvalley air flow would likely traverse the site and continue northward. This is consistent with the May, 1985 observation of wind direction.

V. FIELD PROCEDURES

A. CONCEPT OF OPERATIONS

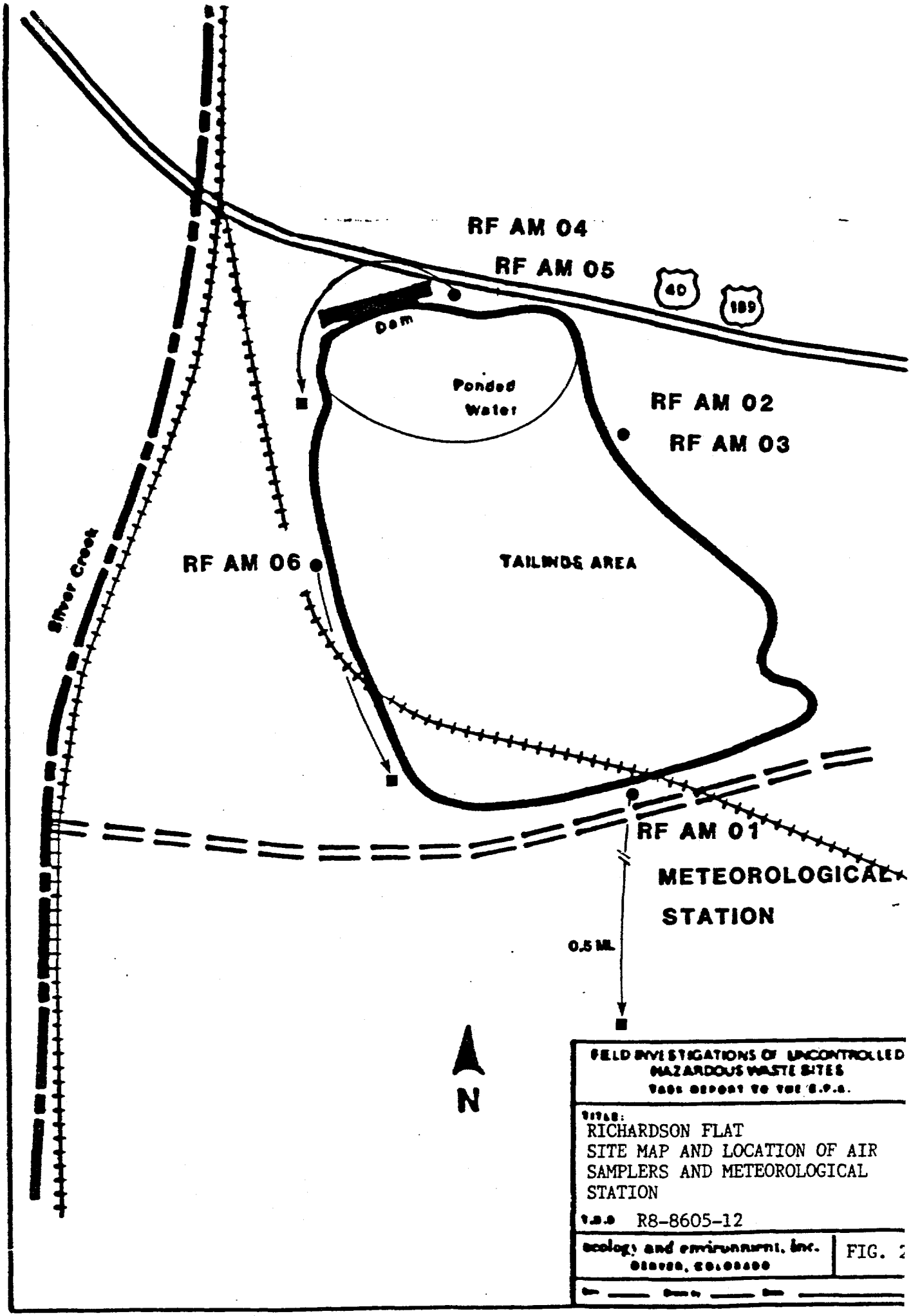
The sampling program is scheduled to begin on or about July 7, 1986 and continue until July 14. The Field Investigation Team will consist of the following E&E personnel:

Henry Schmelzer - Project Officer/Air Sampling Specialist
Dave Franzen - Site Safety Officer/Air Sampling Specialist

B. SAMPLING LOCATIONS

All high-volume air sampling units will be set up in strategic locations adjacent to the study area (Figure 2). Four sampling locations will be used and include one respirable particulate and one duplicate sample location for quality assurance purposes. All proposed sampling sites will be located twenty to thiry feet or greater from the tailings in accordance with siting criteria established in 40 CFR Part 58, Appendix E.

Sample location RF-AM-01 will be located approximately 0.5 miles south of the tailings area and will serve as a distant background sample. Prevailing winds historically blow from the southeast. Sampler location RF-AM-02 will be located on the east side of the tailings area. Sampler RF-AM-03, which is a quality control duplicate, will also be located here. Sampler RF-AM-04 will be located on the northwest side of the tailings area, southeast of the dam. Sampler RF-AM-05 with the PM-10 respirable head will also be located here. Sampler RF-AM-06 will be located on the southwest side of the tailings area.


RF AM 04
RF AM 05
40
189
Dam
Ponded Water
RF AM 02
RF AM 03
RF AM 06
Silver Creek
TAILINGS AREA
RF AM 01
METEOROLOGICAL STATION
0.5 MI.
N
FIELD INVESTIGATIONS OF UNCONTROLLED HAZARDOUS WASTE SITES
TASK REPORT TO THE E.P.A.
TITLE:
RICHARDSON FLAT
SITE MAP AND LOCATION OF AIR SAMPLERS AND METEOROLOGICAL STATION
E.P.A. R8-8605-12
ecology and environment, inc.
DENVER, COLORADO
FIG. 2

As specified by the FIT SOP V-1, sampler inlets will be elevated to two meters above ground surface in the breathing zone. Electrical power is not available at the site, consequently, portable unleaded gasoline-powered generators will be used to supply power at each of the four sampling sites. The generators will be located approximately fifty feet upwind from each sampler.

The meteorological station will be located on the south side of the tailings area by the railroad tracks and between the tailings and the gravel road. Barometric pressure, temperature, wind speed and direction will be recorded by the meteorological station. Wind direction data will be used to determine which of the three samplers located adjacent to the site are upwind and downwind of the site. During each twelve hour sampling period temperature and barometric pressure are required to convert flow-rate to conditions at STP.

The meteorological data will be representative of conditions on site during the period of sampling. Radical changes in wind direction data will be taken into account when designating the appropriate upwind sampler location. Precipitation measurements are not needed for data calculations, however, samples will not be collected during extended periods of precipitation (i.e., 24 hours). Tailings dust is expected to blow from the site over a five day period even when precipitation occurs occasionally. Frequency and duration of precipitation, and changes in meteorological conditions will be noted in the field logbook.

No railroad-associated contaminants are expected, however, any dust produced by train passage will be noted in the field logbook. The frequency of train passage will also be noted.

The potential for roadway lead contaminants from Highway 40 will be accounted for by taking three soil samples perpendicular to the highway at 0.25 to 0.5 miles from the site.

The potential for dust contamination from the gravel road which parallels the southern boundary of the site will be solved by locating RFAM-1 0.5 miles south of the site as a distant background sampler. Frequency of vehicle passage on the road will be noted.

Based on information obtained during past site visits, no obstructions by vegetation are anticipated. The tailings material supports little to no vegetation and the surrounding area is predominated by semi-desert shrubs and forbs. As specified in 40 CFR, Part 58, Apppendix E and SOP IV-1 samplers will be located at least twenty meters from any trees or other obstructions which might be present.

C. COORDINATION

Coordination for site access will be maintained with UPCM, Susan Kennedy of E&E, Inc. and Kelcey Land of the Region VIII EPA Superfund group.

D. FIELD SAFETY

An approved Site Safety Plan for this project will be developed prior to the execution of the sampling plan.

E. PROJECT SCHEDULE

The tentative project dates are as follows:

July 7	-- Travel to Salt Lake City, Utah
July 8	-- Set up sampling locations at Richardson Flat
July 9-13	-- Sample
July 14	-- End sampling, take down samplers

F. CONTROL OF CONTAMINATED MATERIALS

Air sampling activities will take place off-site, and such sampling is not expected to generate any contaminated materials.

VI. LOGISTICS

All safety and operational equipment necessary to conduct this investigation is currently available by FIT VIII. One inhalable particulate (<10 microns) sampler head will be used in this project. All equipment will be transported in a FIT vehicle. Samples will be delivered to EPA Region VIII Laboratory or an approved CLP lab for analysis. If a CLP laboratory is used, FIT will provide a Special Analytical Services request stating the method, detection limits and quality assurance criteria.

VII. QUALITY CONTROL

A. SAMPLE METHODS

Prior to sampling, all equipment will be thoroughly inspected to insure it is functioning properly. Each high volume unit will be calibrated, and flow will be set using an orifice calibration unit in the field. Barometric pressure, temperature, wind speed and direction will be recorded by the meteorological station.

Samples will be collected for twelve hours (8-9 a.m. to 8-9 p.m.) for five consecutive days, weather permitting. The samples will be collected on cellulose filters. Stainless steel filter cartridges with covers will be used to handle filters and facilitate changing.

Samples will be analyzed for arsenic, cadmium, lead and zinc content. A detection limit of 1.0 part per billion (ppb) will be used by the laboratory when analyzing for the above constituents.

TABLE 2

SAMPLE PLAN CHECK LIST

REGION VIII

Site Name: Richardson Flat Tailings

TDD Number: R8-8605-12

Address: Highway 40, Keetley Junction

Project Team Leader: Henry Schmelzer

City: Park City County: Summit

Sampling Date: July 7 to 11, 1986

Sample Location	Sample Type	Field Parameters					Laboratory Parameters														
		Temp	pH	Cond	DO	Special	Task 1&2 *Metals	Task 3 Cyanide	Task 3 Sulfide	Task 3 Ammonia	Special Arsenic	Special NO3&NO2	Special Inorganic	VOA	B/N/A Extract	Pesticide	Special Organic	Split	Dup	Spike	Blank
RF-AM-01	Air						X														Background
RF-AM-02	Air						X														
RF-AM-03	Air						X												X		
RF-AM-04	Air						X														
RF-AM-05	Air						X														Respirable
RF-AM-06	Air						X														
						Samples will be collected at each location for 5 days.															

* Arsenic, cadmium, lead and zinc only.

The hi-vol units will be positioned two meters off the ground at the chosen sampling locations. Each unit will be operated at a pre-set flow rate (40 cubic feet per minute) for twelve hours. The filter will then be removed as quickly as possible, folded lengthwise so that only surfaces with collected particulates are in contact, and catalogued in a manila folder. All necessary data will be fully documented. The folders will be placed in envelopes and submitted for chemical analysis. The samples will be analyzed by ICP scan.

Only one PM10 respirable head sampler is available to FIT in Region VIII. The PM10 sample will aid in evaluating overall health effects. Due to the fact that sample weight will not be collected, the metal concentration in the PM10 fraction and the total particulate fraction cannot be compared with one another.

Quality control of documentation, filter handling and submission, chain of custody, calibration and unit maintenance will be in accordance with the previously cited FIT SOP and quality assurance will be strictly maintained.

The field blanks, one for ecah sampling day, and two blank filters designated "laboratory spike" will be included as part of the laboratory QA/QC prcedure. All filters will be from one lot number.

All applicable quality assurance requirements for Prevention of Significant Deterioration (PSD) Air Monitoring as defined in 40 CFR Part 58, Appendix B, and Section No. 2.2.8. of the "Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II - Ambient Air Specific Methods," will be implemented for this program.

B. CHAIN OF CUSTODY

Chain of custody procedures as prescribed by the NEIC will be strictly adhered to throughout the sampling program.

VIII. SAMPLING REPORT

Upon completion of the sampling program, a report of sampling activities will be submitted to the EPA Region VIII. Upon receipt of the analytical data, an Analytical Results Report will be prepared under a separate TDD.

EXHIBIT 15-E

SITE INSPECTION REPORT

RICHARDSON'S FLAT TAILINGS

SUBMITTED TO:

Eric Johnson, EPA Region VIII

State file

Submitted by:

Don Verbica
Utah Division of Environmental Health
Bureau of Solid and Hazardous Waste

August 30, 1984

TABLE OF CONTENTS

Scott M. Matheson
Governor

James O. Mason, M.D., Dr.P.H.
Executive Director
801-533-6111

DIVISIONS
Community Health Services
Environmental Health
Family Health Services
Health Care Financing

OFFICES
Administrative Services
Community Health Nursing
Management Planning
Medical Examiner
State Health Laboratory

STATE OF UTAH
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
150 West North Temple, P.O. Box 2500, Salt Lake City, Utah 84110-2500

Kenneth Lee Alkema, Director
Room 474 801-533-6121

September 4, 1984

Mr. Eric Johnson
U.S. Environmental Protection Agency
Region VIII
1860 Lincoln Street
Denver, Colorado 80295

Subject: Site inspection report, Richardson's Flat tailings, Summit County, Utah

Dear Mr. Johnson:

Submitted herewith is a site inspection report for the Richardson's Flat tailings.

Based upon information available at the time this inspection was prepared, it is recommended that this site be given National Priority List Consideration. It is further recommended that the FIT take HiVol samples to score the route for air.

Richardson Flat tailings are located in the NW 1/4 of section 1, T25, R4E, of the Park City East, Quadrangle, between Park City and Keetley Junction. The exact amount of tailings on-site is unknown. But it is estimated that there are approximately 7 million tons of tailings most likely deposited in the late 60's and early 70's.

The mill tailings at Richardson's Flat came from the Ontario Keetley mine and other mines owned by United Park City Mines. The tailings are next to Silver Creek and numerous small tributaries flow through the tailings.

Mr. Ray Wortley is currently leasing part of the tailings from United Park City Mines and is using the tailings as backfill for sewer lines and roadbase.

During the June inspection samples were taken from groundwater, surface water and tailings. Groundwater concentrations of arsenic at .325 ppm, cadmium at .120 ppm, lead at 31.8 ppm and mercury at 0.26 ppm were found in a spring below Richardson's Flat. It was observed during the inspection that tailings were being blown off-site. It is recommended that EPA's FIT collect Hivol samples downgradient of Richardson's Flat.

The score given Richardson's Flat without the route for air is 36.19, but the state feels with the route for air added it would increase the score.

If you have any questions, please contact Don Verbica.

Sincerely,

Dale D. Parker, Ph.D.
Executive Secretary
Utah Solid and Hazardous Wastes
Committee

DGV/ab
5678

APPENDIX 1

PHOTOGRAPHS

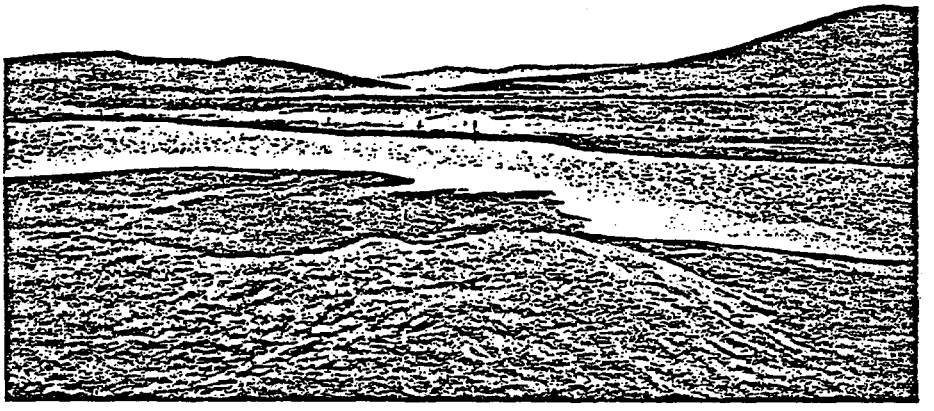


Photo #1: Ponded water on Richardson's flat tailings

Photo #2: Tailings being blown off-site during a wind storm.

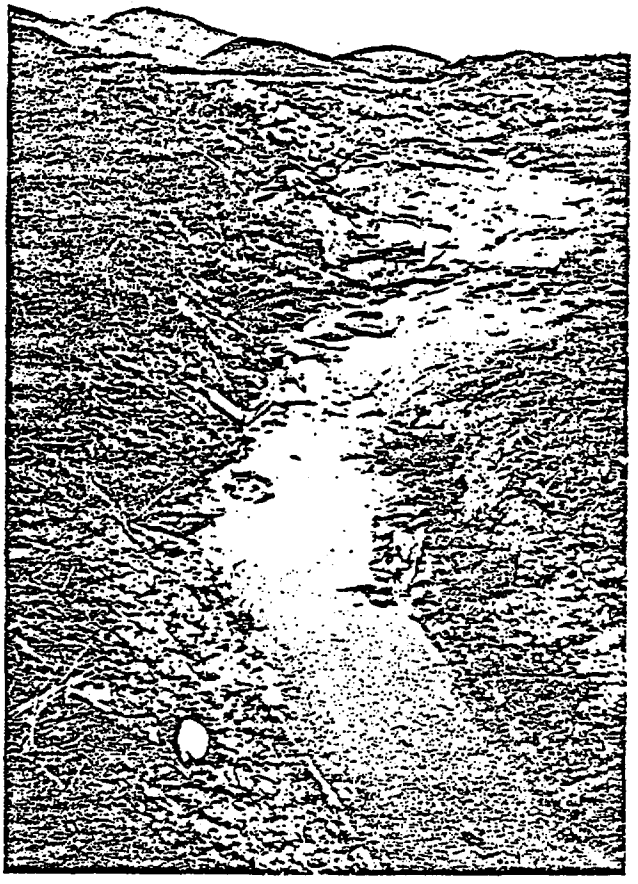


Photo #3: Discolored water in canal made of tailings near Richardson's Flat

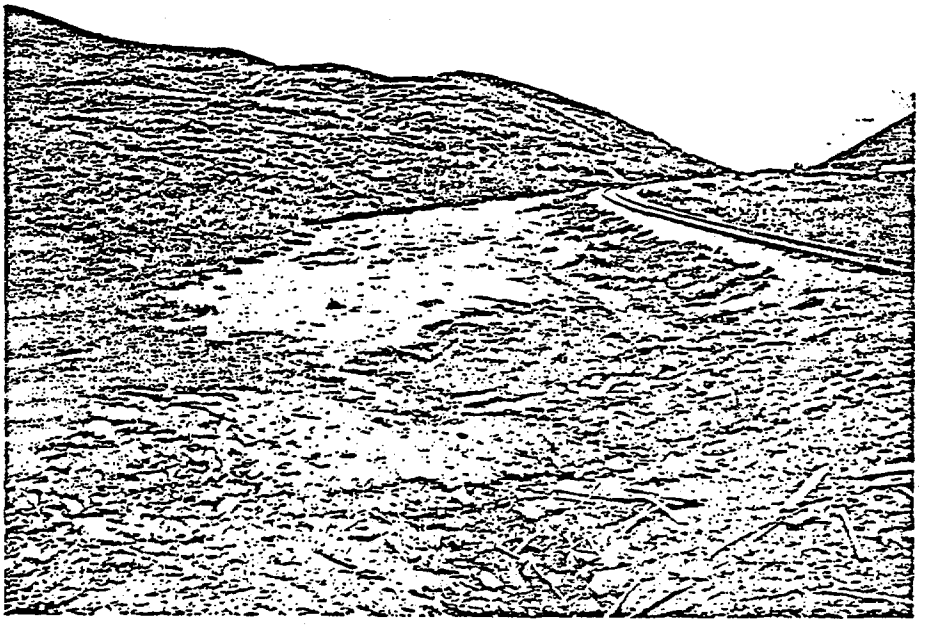
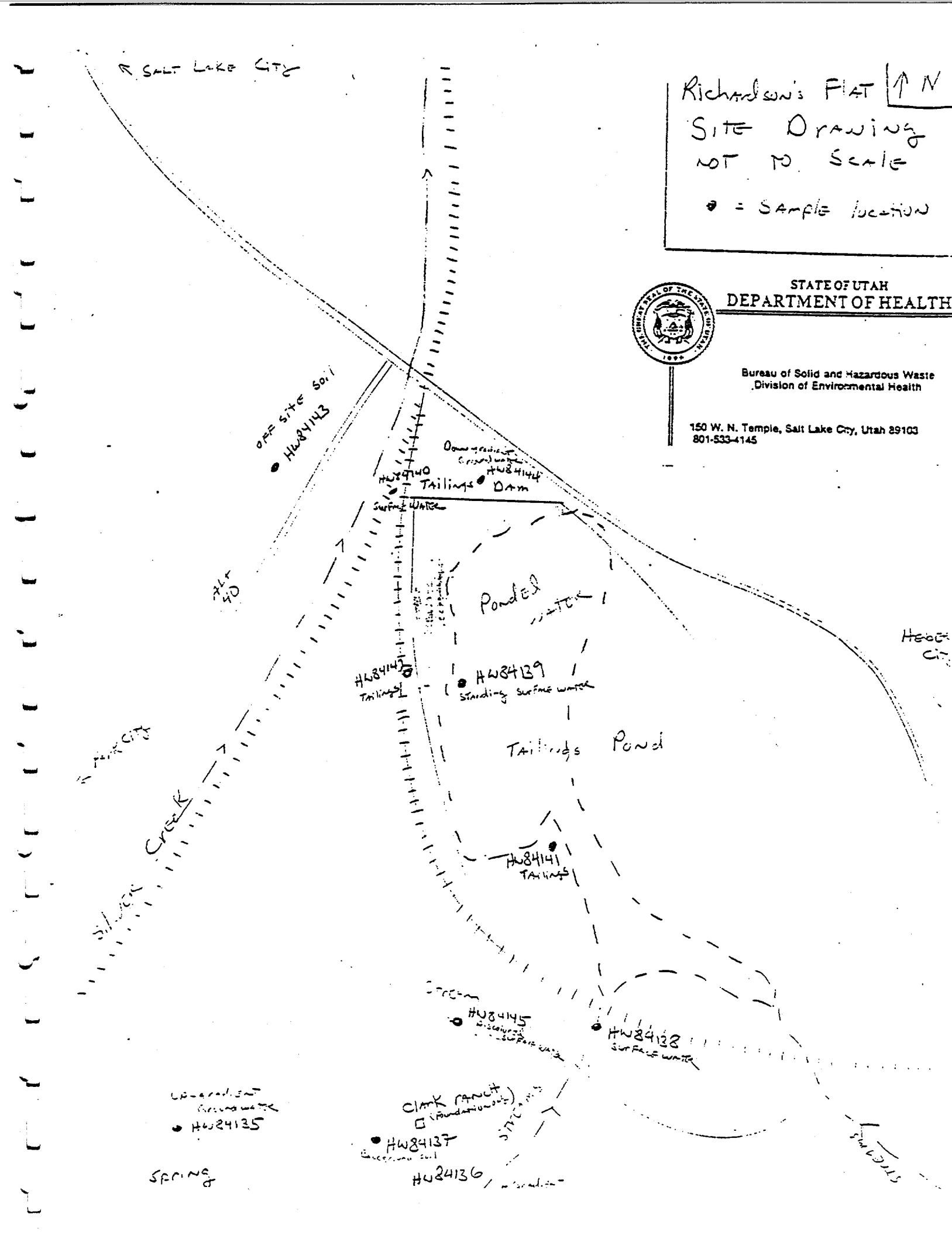
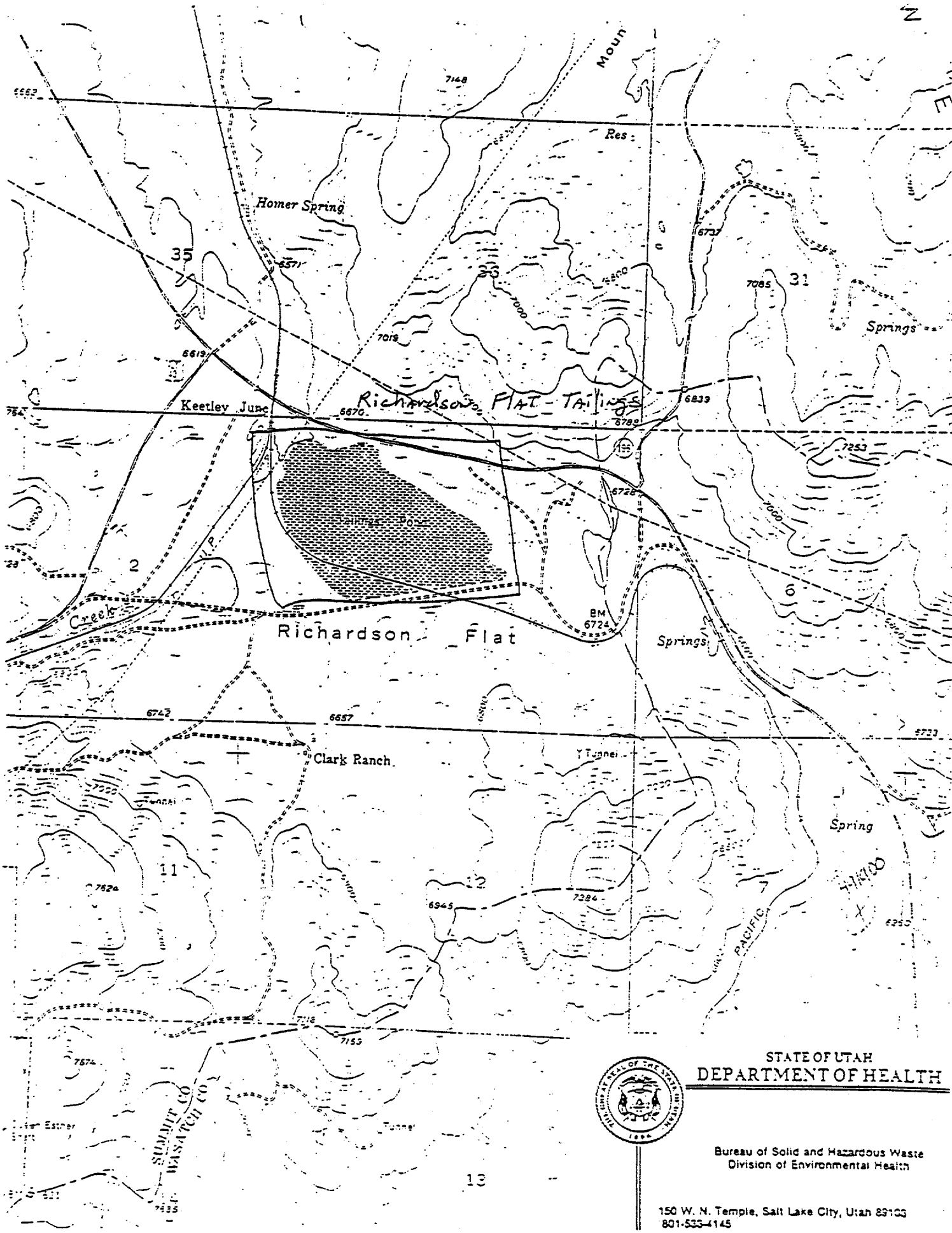


Photo #4: Tailings above Richardson's Flat near Silver Creek.


Richardson's Flat
Site Drawing
NOT TO Scale
• = Sample location
N
STATE OF UTAH
DEPARTMENT OF HEALTH
Bureau of Solid and Hazardous Waste
Division of Environmental Health
150 W. N. Temple, Salt Lake City, Utah 89103
801-533-4145
SALT LAKE CITY
PARK CITY
OFF SITE SOIL
HW84143
HW84140
Tailings Dam
HW84144
SURFACE WATER
Ponded Water
HW84142
Tailings
HW84139
Standing surface water
Tailings Pond
HW84141
TAILINGS
Silver Creek
HW84145
HW84138
SURFACE WATER
CLARK RANCH
(Foundations)
HW84135
HW84137
HW84136
SPRING



STATE OF UTAH
DEPARTMENT OF HEALTH

Bureau of Solid and Hazardous Waste
Division of Environmental Health

150 W. N. Temple, Salt Lake City, Utah 84103
801-533-4145

APPENDIX 2

SITE INSPECTION FORM

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common or descriptive name of site)
Richardson's Flat Tailings

02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER
NW 1/4 Sec 1 T25 R4E

03 CITY
Park City East Quadrangle

04 STATE | 05 ZIP CODE | 06 COUNTY | 07 COUNTY CODE | 08 CONG DIST.
Utah | | Summit | 043 | 3

09 COORDINATES
LATITUDE: 40 40 42._
LONGITUDE: 111 27 05._

10 TYPE OF OWNERSHIP (Check one)
X A. PRIVATE B. FEDERAL: _____ C. STATE
D. COUNTY E. MUNICIPAL F. OTHER: _____
G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION
06/04/84

02 SITE STATUS
A. ACTIVE
X B. INACTIVE

03 YEARS OF OPERATION
BEGINNING YEAR _____ ENDING YEAR _____ UNKNOWN _____

01 AGENCY PERFORMING INSPECTION (Check all that apply)
A. EPA B. EPA CONTRACTOR _____ (Name of Firm) C. MUNICIPAL D. MUNICIPAL CONTRACTOR _____ (Name of Firm)
X E. STATE F. STATE CONTRACTOR _____ (Name of Firm) G. OTHER: _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Don Verbica	Geologist	UBSHW	(801)533-4145
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Joel Hebdon	Eng. Geologist	UBSHW	(801)533-4145

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
PERMISSION WARRANT	10:00 a.m.	overcast and warm

IV INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Don Verbica	8SHW/USHD	(801)533-4145
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION
Dale Parker	BSHW	USHD
07 TELEPHONE NO.	08 DATE	
(801)533-4145	09/04/84	

EPA FORM 2070-13(7-81)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)
- A. SOLID
- B. POWDER, FINES
- C. SLUDGE
- D. OTHER (Specify)
- E. SLURRY
- F. LIQUID
- G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)
- * TONS 7 million
- CUBIC YARDS
- NO. OF DRUMS

03 WASTE CHARACTERISTICS (Check all that apply)
- X A. TOXIC
- B. CORROSIVE
- C. RADIOACTIVE
- X D. PERSISTENT
- X E. SOLUBLE
- F. INFECTIOUS
- G. FLAMMABLE
- H. IGNITABLE
- I. HIGHLY VOLATILE
- J. EXPLOSIVE
- K. REACTIVE
- L. INCOMPATIBLE
- M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS	unknown	As	
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	unknown	Pb, Cd	

IV. HAZARDOUS SUBSTANCES (See Appendix formost frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/ DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Lead	999	SI	31.8	ppm ground water (total metals)
MES	cadmium	999	SI	.120	ppm ground water (total metals)
IOC	arsenic	999	SI	.40	ppm ground water (total metals)
MES	lead	999	Tailings sample	3960	ppm (total metals)
IOC	arsenic	999	tailings sample	252	ppm (total metals)
MES	cadmium	999	tailings sample	447	ppm (total metals)
MES	mercury	999	tailings sample	1.24	ppm (total metals)

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

sample analysis, state files

EPA FORM 2070-13(7-81)

* Tonage based on 160 acres 20 feet thick

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 A. GROUNDWATER CONTAMINATION 02 OBSERVED (DATE:_____) X POTENTIAL
03 POPULATION POTENTIALLY AFFECTED: 10,000[1]* ALLEGED
04 NARRATIVE DESCRIPTION
Potential exists for the contamination of groundwater. The tailings lie next to Silver Creek and sit on top of old stream sediments (sands and clays). The water table is relatively high due to Silver Creek. The tailings are porous and could be leached, the resulting leachate could migrate into the groundwater.

01 B. SURFACE WATER CONTAMINATION 02 OBSERVED (DATE:_____) X POTENTIAL
03 POPULATION POTENTIALLY AFFECTED: 10,000[1]* ALLEGED
04 NARRATIVE DESCRIPTION
Potential exists for the contamination of surface water. Many samll tributaries of Silver Creek flow through the tailings and from a pond. Silver Creek lies due west of the site and could be effected by any leachate forming on the tailings.

01 C. CONTAMINATION OF AIR 02 OBSERVED (DATE:_____) X POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000[2]* 04 NARRATIVE DESCRIPTION
Potential exists for contamination of air. The tailing consists of small particles that are easily air borne. Pictures taken of site show tailings blowing off-site. The tailngs contain lead and cadmium which could be harmful if ingested.

01 D. FIRE/EXPLOSIVE CONDITIONS 02 OBSERVED (DATE:_____) POTENTIAL
03 POPULATION POTENTIALLY AFFECTED:_____ ALLEGED
04 NARRATIVE DESCRIPTION
Not applicable

01 E. DIRECT CONTACT 02 OBSERVED (DATE:_____) X POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 950[3] 04 NARRATIVE DESCRIPTION
Potential exists for direct contact. There is no fence or guard to prevent people from entering the tailings pond.

01 F. CONTAMINATION OF SOIL 02 OBSERVED (DATE:_____) X POTENTIAL ALLEGED
03 AREA POTENTIALLY AFFECTED: 100 04 NARRATIVE DESCRIPTION
Potential exists for contamination of soil. The tailings are porous and so is the surround soil. The soil has been in continous contact with the tailings for a number of years. Any leachate formed by the tailings could have contaminatec the soil.

01 G. DRINKING WATER CONTAMINATION 02 OBSERVED (DATE:_____) POTENTIAL
03 POPULATION POTENTIALLY AFFECTED: 10,000[1] ALLEGED
04 NARRATIVE DESCRIPTION
Potential exists for contamination of drinking water by the migration of leachate.

01 H. WORKER EXPOSURE/INJURY 02 OBSERVED (DATE:_____) POTENTIAL ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 0 04 NARRATIVE DESCRIPTION
Mr. Ray Wortley has a lease on the mine tailings and is removing them for use in construction. A few workers load the tailings into dump trucks on-site. These workers could be affected if the tailings are harmful.

01 I. POPULATION EXPOSURE/INJURY 02 OBSERVED (DATE:_____) POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 950[3] 04 NARRATIVE DESCRIPTION
The nearest large population is Park City which is approx. 2 miles from site. There is no means on-site to prevent direct access by the local population.

EPA FORM 2070-13(7-81) 1 = 3 mile radius; 2 = 4 mile radius; 3 = 1 mile racius
*Population of Park City in winter

EPA POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 J. DAMAGE TO FLORA 02 OBSERVED (Date:_____) X POTENTIAL ALLEGED
04 NARRATIVE DESCRIPTION
Potential exists for damage to Flora. Grass and shrubs will not grow on the mine tailings.

01 K. DAMAGE TO FAUNA 02 OBSERVED (DATE:_____) X POTENTIAL ALLEGED
04 NARRATIVE DESCRIPTION
Potential exists for damage to fauna. Beaver and muskrats live near the site on Silver Creek. Silver Creek is a 3A (water quality) stream, it is a tributary of the Weber River which is a trout stream.

01 L. CONTAMINATION OF FOOD CHAIN 02 OBSERVED (DATE:_____) POTENTIAL
04 NARRATIVE DESCRIPTION ALLEGED
Potential exists for contamination of food chain (grass and roots) of beaver and muskrats that live and eat on Silver Creek. Crops that are irrigated by Silver Creek could also be contaminated.

01 M. UNSTABLE CONTAINMENT OF WASTES 02 OBSERVED (Date:_____) POTENTIAL
(Soils/runoff/standing liquids/leaking drums) ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 950[3]
04 NARRATIVE DESCRIPTION
Potential exists for unstable containment of waste. Tailings have been observed blowing off-site.

01 N. DAMAGE TO OFFSITE PROPERTY 02 OBSERVED (DATE:_____) POTENTIAL
04 NARRATIVE DESCRIPTION ALLEGED
It is alleged that off-site property is being contaminated. Tailings were found on the north side of the highway and they most liekly came from Richardson's Flat.

01 O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 OBSERVED (DATE:_____)
04 NARRATIVE DESCRIPTION POTENTIAL ALLEGED
Unknown at the time this assessment was made.

01 P. ILLEGAL/UNAUTHORIZED DUMPING 02 OBSERVED (DATE:_____) POTENTIAL
04 NARRATIVE DESCRIPTION ALLEGED
Unknown at the time this assessment was made.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED:

IV COMMENTS
State files

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED	02 PERMIT NO.	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
A. NPDES				
B. UIC				
C. AIR				
D. RCRA				
E. RCRA INTERIM STATUS				
F. SPCC PLAN				
G. STATE (Specify)				
H. LOCAL (Specify)				
I. OTHER (Specify)				
J. NONE	No records of any permits in state files			

III. SITE DESCRIPTIONS

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)
A. SURFACE IMPOUNDMENT			A. INCINERATION
B. PILES			B. UNDERGROUND INJECTION
C. DRUMS, ABOVE GROUND			C. CHEMICAL/PHYSICAL
D. TANK, ABOVE GROUND			D. BIOLOGICAL
E. TANK, BELOW GROUND			E. WASTE OIL PROCESSING
F. LANDFILL			F. SOLVENT RECOVERY
G. LANDFARM			G. OTHER RECYCLING/RECOVERY
H. OPEN DUMP			H. OTHER (Specify)
I. OTHER Mill tailings pond (Specify)	FM	tons	

05 OTHER
A. BUILDINGS ON SITE none

06 AREA OF SITE
100 (Acres)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)
A ADEQUATE, SECURE B MODERATE X C INADEQUATE, POOR D INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.
It was observed during the June inspection that tailings were being blown off-site.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: X YES NO

02 COMMENTS The site is easily accessible. There is no fence to keep people off.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

site inspection 06/04/84

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A.	B. X
NON-COMMUNITY	C.	D.

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A.	B.	C.
D.	E.	F.

03 DISTANCE TO SITE
A. 3 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)
A. ONLY SOURCE FOR DRINKING
C. COMMERCIAL, INDUSTRIAL, IRRIGATION
D. NOT USED, UNUSEABLE
X B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)

02 POPULATION SERVED BY GROUNDWATER 10,000

03 DISTANCE TO NEAREST DRINKING WATER WELL _____ (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN
0 - 10 (ft)	WNW	10 * (ft)

07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER	
270 ft3/d/lt (gpd)	X YES	NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings) There are 3 monitoring wells directly below the tailings dam.
*According to Baker (1970), the Woodside is fractured in the Park City area. Consequently, hydraulic connection between the Woodside fr and the alluvium is assumed.

10 RECHARGE AREA		11 DISCHARGE AREA	
X	YES	YES	COMMENTS
	NO	NO	

COMMENTS: minor recharge in unconsolidated Valley fill

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)
A. RESERVOIR, RECREATION DRINKING WATER SOURCE
X B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
C. COMMERICAL, INDUSTRIAL
D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Silver Creek	___	1,000 ft (mi)
_____	___	_____ (mi)
_____	___	_____ (mi)

EPA POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE 02 SITE NO.

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MI. OF SITE	TWO (2) MI. OF SITE	THREE (3) MI. OF SITE
A. _____	B. _____	C. _____
No. of persons	No. of persons	No. of persons

02 DISTANCE TO NEAREST POPULATION _____ (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE _____

04 DISTANCE TO NEAREST OFF-SITE BUILDING _____ (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicintiy of site, e.g., rural, village densely populated urban area)
Population near site is rural farming area. Park City (population 710,000 in the winter) is approx. 3 miles to the west.

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)
A. 10^{-6} - 10^{-8} cm/sec B. 10^{-4} - 10^{-6} cm/sec C. 10^{-4} - 10^{-3} cm/sec
X D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)
A. IMPERMEABLE (Less than 10^{-6} cm/sec) B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) X C. RELATIVELY PERMEABLE (10^{-2} - 10^{-4} cm/sec)
D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	06 NET PRECIPITATION
100 (ft)	unknown (ft)	_____	-12 (in)

07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
1 - 1.4 (in)	1 - 3 %	northwest	1 - 5 %

09 FLOOD POTENTIAL
SITE IS IN 5 YEAR FLOODPLAIN

10 SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)
ESTUARINE A. _____ (mi) OTHER B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species) _____ (mi)
ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO: COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS: NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AG LAND
A. 2 (mi)	B. 2 (mi)	C. 1000 ft (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPGRAPHY
Richardson flat is a small valley approximately 2 miles west of Park City. Most of Richardson Flat lies in Silver Creek flood plain.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	Ut State Dept. of Health Lab	8/84
SURFACE WATER	4	Ut State Dept. of Health Lab	8/84
WASTE	2	Ut State Dept. of Health Lab	10/84
AIR			
RUNOFF			
SPILL			
SOIL	2	Ut State Dept. of Health Lab	10/84
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
None	

IV. PHOTOGRAPHS AND MAPS

01 TYPE X GROUND AERIAL 02 IN CUSTODY OF Bureau of Solid and Hazardous Waste
(Name of organization or individual)

03 MAPS 04 LOCATION OF MAPS
X YES Utah Dept. of Oil, Gas & Mining
NO

V. OTHER FIELD DATA COLLECTED (Provide narrative description)
None

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
Lab analyses

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. CURRENT OWNER(S) — PARENT COMPANY (If applicable)

01 NAME | 02 D+B NUMBER | 08 NAME | 02 D+B NUMBER
United Park City Mines

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 10 STREET ADDRESS (P.O. Box, RFD#, etc.) | 11 SIC CODE
309 Kearns Bldg

05 CITY | 06 STATE | 07 ZIP CODE | 12 CITY | 13 STATE | 14 ZIP CODE
Salt Lake City | Utah | 84101

01 NAME | 02 D+B NUMBER | 08 NAME | 02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 10 STREET ADDRESS (P.O. Box, RFD#, etc.) | 11 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE | 12 CITY | 13 STATE | 14 ZIP CODE

01 NAME | 02 D+B NUMBER | 08 NAME | 02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 10 STREET ADDRESS (P.O. Box, RFD#, etc.) | 11 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE | 12 CITY | 13 STATE | 14 ZIP CODE

01 NAME | 02 D+B NUMBER | 08 NAME | 02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 10 STREET ADDRESS (P.O. Box, RFD#, etc.) | 11 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE | 12 CITY | 13 STATE | 14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first) — IV. REALTY OWNER(S) (If applicable, list most recent first)

01 NAME | 02 D+B NUMBER | 01 NAME | 02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE

01 NAME | 02 D+B NUMBER | 01 NAME | 02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
01 NAME Ray Wortley*	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD#, etc.) unknown	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD#, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)			PREVIOUS OPERATOR'S PARENT COMPANIES (If applicable)		
01 NAME Noranda Mining Co.	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD#, etc.) unknown	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD#, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD#, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD#, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

*Mr. Wortley leases part of the tailings for use as roadbase and fill for sewer lines.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)	13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. PAST RESPONSE ACTIVITIES

01 A. WATER SUPPLY CLOSED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 D. SPILLED MATERIAL REMOVED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 E. CONTAMINATED SOIL REMOVED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 F. WASTE REPACKAGED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 G. WASTE DISPOSED ELSEWHERE — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 H. ON SITE BURIAL — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 I. IN SITU CHEMCIAL TREATMENT — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 J. IN SITU BIOLOGICAL TREATMENT — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 K. IN SITU PHYSICAL TREATMENT — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 L. ENCAPSULATION — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 M. EMERGENCY WASTE TREATMENT — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. PAST RESPONSE ACTIVITIES (Continued)

01 N. CUTOFF WALLS 02 DATE 03 AGENCY
04 DESCRIPTION

01 O. EMERGENCY DIKING/SURFACE WATER DIVERSION 02 DATE 03 AGENCY
04 DESCRIPTION

01 P. CUTOFF TRENCHES/SUMP 02 DATE 03 AGENCY
04 DESCRIPTION

01 Q. SUBSURFACE CUTOFF WALL 02 DATE 03 AGENCY
04 DESCRIPTION

01 R. BARRIER WALLS CONSTRUCTED 02 DATE 03 AGENCY
04 DESCRIPTION

01 S. CAPPING/COVERING 02 DATE 03 AGENCY
04 DESCRIPTION

01 T. BULK TANKAGE REPAIRED 02 DATE 03 AGENCY
04 DESCRIPTION

01 U. GROUT CURTAIN CONSTRUCTED 02 DATE 03 AGENCY
04 DESCRIPTION

01 V. BOTTOM SEALED 02 DATE 03 AGENCY
04 DESCRIPTION

01 W. GAS CONTROL 02 DATE 03 AGENCY
04 DESCRIPTION

01 X. FIRE CONTROL 02 DATE 03 AGENCY
04 DESCRIPTION

01 Y. LEACHATE TREAMENT 02 DATE 03 AGENCY
04 DESCRIPTION

01 Z. AREA EVACUATED 02 DATE 03 AGENCY
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. PAST RESPONSE ACTIVITIES (Continued)

01 1. ACCESS TO SITE RESTRICTED 02 DATE 03 AGENCY
04 DESCRIPTION

01 2. POPULATION RELOCATED 02 DATE 03 AGENCY
04 DESCRIPTION

01 3. OTHER REMEDIAL ACTIVITIES 02 DATE 03 AGENCY
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13(7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NO.

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION YES X NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

APPENDIX 3

SAMPLE ANALYSIS SHEETS

Rev. 3 82 | Field No. 135 | Pest. | Rad. | Bact. | Spec. | Date Recd.: | Received By:

UTAH STATE DEPARTM .F HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Sample No. 43841927

District No. | Water Syst. No. | Source No.

Date Collected: 84 06 19 (yr. mo. dy.) | Time Collected: 09 15 (24-hour clock) | Water Rights No.

Exact Description of sampling Point: [illegible] SPRING

Supply Owned by | Sample Type

Sample Collected by: [illegible]

SEND REPORT TO: Phone 533 141 143
TIM SAMBO
150 WEST NORTH TEMPLE
SLC UTAH 84110
zip code

Sample Source: 04 Lake
County: 21
Current use | Proposed use: 4
1. Culinary 2. Agriculture 3. Industrial 4. Other
Cost Code: 365

FIELD TESTS

Temperature (°C)	792	CO_2, mg/l	572
D.O., mg/l	793	Depth, m	609
Sp. Cond. µmhos	653	Cl Resid., mg/l	753
pH	651	Flow, MGD	652
Sp. Gravity	608	Flow, GPM	604
Transparency, m	649	Flow, cfs	659

2 | Temperature(°C) | 650 | pH | 782 | WASTEWATER ANALYSIS | BACT. LAB. No.

	mg/l		mg/l		
B.O.D.$_5$	794	T.O.C.	671	M.P.N. Total Coliforms/100ml	658
Tot. Sus. Solids	787	C.O.D.	777	M.P.N. Fecal Coliforms/100ml	657
NO_2+NO_3-N	602	Cyanide	775	Fecal Strep C/100ml.	656
T.K.N.	778	Phenolics	783	M.F. Total Coliforms/100ml.	654
Oil & Grease	780	Sulfide	672	M.F. Fecal Coliforms/100ml.	655
				Plate Count-Org./ml.	599

3 | Filtered | Unfiltered | 4 CHEMICAL ANALYSIS | pH, units 7.5

me/l	CATIONS	mg/l	ug/l (ppb)		me/l	ANIONS	mg/l	
	Ammonia as N			722		Bicarbonate	194	758
	Arsenic			723		Carbon Dioxide	13	759
	Barium			724		Carbonate	0	760
	Boron			725	.59	Chloride	21	763
	Cadmium			727	2.13	CO_3 Solids	93	
2.40	Calcium	48		728		Fluoride	0.16	765
	Chromium			729		Hydroxide	0000	767
	Chromium, Hex. as Cr		< 5	730	.21	Nitrate as N	2.93	605
	Copper			732		Nitrite as N	< 0.01	606
	Iron, dissolved			733		Phosphorus, Ortho as P	0.04	607
	Lead			734		Silica, dissolved as SiO_2	33	750
.80	Magnesium	10		737	0.35	Sulfate	17	772
	Manganese			738				
	Nickel			740				
.03	Potassium	1.1		742	4.27	TOTAL ANIONS		
	Selenium			743		GRAND TOTAL		
	Silver			744				
1.13	Sodium	26		745		Tot. Phosphorus		785
	Zinc			749		Total Alk. as $CaCO_3$	159	752
4.36	TOTAL CATIONS					T. Hdns. as $CaCO_3$	160	754
						Surfactant as MBAS		773
						Turbidity, as NTU	0.3	757
						Sp. Gravity		608

Sp. Cond. µmhos/cm.	410	762
TDS @ 180°C	380	786

TOTAL METALS ANALYSIS ppm

5 CATIONS	mg/l	ug/l (ppb)	
Aluminum	< 0.1		600
Arsenic		0.011	660
Barium	< 0.5		661
Beryllium	< 0.01		801
Cadmium	< 0.01		662
Chromium	< 0.02		663
Cobalt	< 0.1		804
Copper	< 0.01		664
Gold			700
Iron	< 0.03		755
Lead	< 0.1		665
Manganese	< 0.01		666
Mercury	< 0.0001		735
Molybdenum	< 0.1		802
Nickel	< 0.1		667
Selenium	< 0.005		668
Silver	< 0.01		669
Uranium			601
Vanadium	< 0.3		803
Zinc	0.015		670

6 RADIOLOGICS

	pCi/l		pCi/l	
Alpha, gross		621	^{89}Sr	633
Beta, gross		623	^{131}I	635
Tritium, ^3H		625	^{134}Cs	637
^{226}Radium		627	^{137}Cs	639
^{228}Radium		629		
^{90}Sr		631		

INTERPRETATION OF ANALYSES:
Remarks:

Based on State Standards, this sample was:

	Satisfactory	Conditional	Unsatisfactory
B.O.D.$_5$			
Tot. Sus. Solids			
M.P.N. Total Coliform.			
M.P.N. Fecal Coliform.			

Analyses Approved By: RSH Date: 840626

By ENVIRONMENTAL HEALTH

J. Orman 17-Dec-84

Rev. 3 82 [illegible] 13b

Field No. ________

[X] [illegible]	[X] [illegible]	Nut	Pest.
[illegible]	PSP	BOD	Rad.
			Bact.
			[X] Spec.

Date Recd.: ________

Received By: ________

UTAH STATE DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Sample No. 840841928 (721)

Street No. ________ (702)

Water Syst. No. Source No. ________ (703, 704)

Date Collected (yr. mo. dy.): 840604 (726) Time Collected (24-hour clock): 0944 (630)

Water Rights No. ________ (707)

Exact Description of sampling Point (646): [illegible handwriting]

Supply Owned by ________ (712) Sample Type ________ (710)

Sample Collected by: [illegible] (713)

SEND REPORT TO: Phone 533-4145

TIM [illegible] (715)
150 WEST NORTH TEMPLE (648)
SLC UTAH 84110 (717) zip code

Sample Source: 14 (719)

01 Spring, 02 Well, 03 Stream, 04 Lake, 06 Dist. syst., 07 Effluent, 08 Storm sewer, 14 Other, 15 Tunnel, 18 Artesian well, 19 Swimming pool

County: [illegible] (611)

01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

Current use ____ (708)
Proposed use 4 (705)

1. Culinary
2. Agriculture
3. Industrial
4. Other

Cost Code 365 (770)

RECEIVED JUL 25 1984

1 FIELD TESTS

Temperature		792	CO_2, mg/l		572
D.O., mg/l		793	Depth, m		609
Sp. Cond. µmhos		653	Cl Resid., mg/l		753
pH		651	Flow, MGD		652
Sp. Gravity		608	Flow, GPM		604
Transparency, m		649	Flow, cfs		659

2 Temperature (°C) ____ 650 pH ____ 782 WASTEWATER ANALYSIS — BACT. LAB. No.

	mg/l			mg/l				
B.O.D.$_5$		794	T.O.C.		671	M.P.N. Total Coliforms/100ml		658
Tot. Sus. Solids		787	C.O.D.		777	M.P.N. Fecal Coliforms/100ml		657
NO_2+NO_3,N		602	Cyanide		775	Fecal Strep C/100ml.		656
T.K.N.		778	Phenolics		783	M.F. Total Coliforms/100ml.		654
Oil & Grease		780	Sulfide		672	M.F. Fecal Coliforms/100ml.		655
						Plate Count-Org./ml.		599

3 Filtered / Unfiltered

me/l	CATIONS	mg/l	ug/l (ppb)	Code
	Ammonia as N			722
	Arsenic			723
	Barium			724
	Boron			725
	Cadmium			727
1.58	Calcium	38		728
	Chromium			729
	Chromium, Hex. as Cr		< 5	730
	Copper			732
	Iron, dissolved			733
	Lead			734
.66	Magnesium	7		737
	Manganese			738
	Nickel			740
.05	Potassium	2		742
	Selenium			743
	Silver			744
.69	Sodium	16		745
	Zinc			749
3.22	TOTAL CATIONS			

Sp. Cond. µmhos/cm.	245	762
TDS @ 180°C	262	786

4 CHEMICAL ANALYSIS — pH, units 7.2

me/l	ANIONS	mg/l	Code
	Bicarbonate	174	758
	Carbon Dioxide	11	759
	Carbonate	0	760
.20	Chloride	7	763
2.92	CO_3 Solids	95	
	Fluoride	0.14	765
	Hydroxide	0000	767
	Nitrate as N	0.14	605
	Nitrite as N	< 0.01	606
	Phosphorus, Ortho as P	.12	607
	Silica, dissolved as SiO_2	29	750
0.17	Sulfate	8	772
3.27	TOTAL ANIONS		
	GRAND TOTAL		

Tot. Phosphorus		785
Total Alk. as $CaCO_3$	144	752
T. Hdns. as $CaCO_3$	124	754
Surfactant as MBAS		773
Turbidity, as NTU	53	757
Sp. Gravity		608

TOTAL METALS ANALYSIS ppm

5 CATIONS	mg/l	Code
Aluminum	0.2	800
Arsenic	< 0.010	660
Barium	.14	661
Beryllium	< .01	801
Cadmium	< .01	662
Chromium	< .02	663
Cobalt	< .1	804
Copper	< .01	664
Gold		700
Iron	2.8	755
Lead	< .10	665
Manganese	< .01	666
Mercury	< .0001	739
Molybdenum	< .1	802
Nickel		667
Selenium	< .0005	668
Silver	< .01	669
Uranium,		601
Vanadium	< .3	803
Zinc	1.010	670

6 RADIOLOGICS

Alpha, gross		621	^{89}Sr		633
Beta, gross		623	^{131}I		635
Tritium, ^3H		625	^{134}Cs		637
$^{226}Radium$		627	^{137}Cs		639
$^{228}Radium$		629			
^{90}Sr		631			

Analyses Approved By: RE[illegible] Date: 840629

INTERPRETATION OF ANALYSES:
Remarks:

Based on State Standards, this sample was: Satisfactory / Conditional / Unsatisfactory

B.O.D.$_5$			
Tot. Sus. Solids			
M.P.N. Total Coliform.			
M.P.N. Fecal Coliform.			

By ________ ENVIRONMENTAL HEALTH

J. Oman 17-July-84

HW841.S1 T Soil PH

Rev. 3/82 137

Field No. ______

TC	TM ✓	Nut	Pest.	Date Recd.: ______
PC	PM	BOD	Rad.	Received By: ______
			Bact.	
			Spec.	

UTAH STATE DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Sample No. 4804192[illegible]

Storet No. ______ 702

Water Syst. No. Source No. ______ 703 704

Date Collected: [illegible] (yr. mo. dy.) 611 Time Collected: [illegible] (24-hour clock) 610 Water Rights No. ______ 707

Exact Description of Sampling Point: Kar[illegible] to [illegible] [illegible] [illegible] – [illegible] Soil 646

Supply Owned by ______ 712 Sample Type ______ 710

Sample Collected by: D Verbica 713

SEND REPORT TO: Phone ______

Jim Salmon – Bur Sol Haz 716
150 W North Temple 648
SLC Utah 717
zip code

Sample Source: 14 719
01 Spring, 02 Well, 03 Stream, 04 Lake, 06 Dist. syst., 07 Effluent, 08 Storm sewer, 14 Other, 15 Tunnel, 18 Artesian well, 19 Swimming pool

County: 27 611
01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

Current use 4 708
Proposed use ______ 709
1. Culinary
2. Agriculture
3. Industrial
4. Other

Cost Code 365 770

1 FIELD TESTS

Temperature (°C)	792	CO_2, mg/l	572
D.O., mg/l	793	Depth, m	609
Sp. Cond. µmhos	653	Cl Resid., mg/l	753
pH	651	Flow, MGD	652
Sp. Gravity	608	Flow, GPM	604
Transparency, m	649	Flow, cfs	659

2 Temperature (°C) 650 pH 782 WASTEWATER ANALYSIS BACT. LAB. No.

	mg/l		mg/l		
B.O.D.$_5$	794	T.O.C.	671	M.P.N. Total Coliforms/100ml	658
Tot. Sus. Solids	787	C.O.D.	777	M.P.N. Fecal Coliforms/100ml	657
NO_2+NO_3-N	602	Cyanide	775	Fecal Strep C/100ml.	656
T.K.N.	778	Phenolics	783	M.F. Total Coliforms/100ml.	654
Oil & Grease	780	Sulfide	672	M.F. Fecal Coliforms/100ml.	655
				Plate Count-Org./ml.	599

3 Filtered / Unfiltered — 4 CHEMICAL ANALYSIS — pH, units

CATIONS	mg/l / ug/l (ppb)	Code
Ammonia as N		722
Arsenic		723
Barium		724
Boron		725
Cadmium		727
Calcium		728
Chromium		729
Chromium, Hex. as Cr		730
Copper		732
Iron, dissolved		733
Lead		734
Magnesium		737
Manganese		738
Nickel		740
Potassium		742
Selenium		743
Silver		744
Sodium		745
Zinc		749

TOTAL CATIONS ______

Sp. Cond. µmhos/cm.		762
TDS @ 180°C		786

ANIONS	mg/l	Code
Bicarbonate		758
Carbon Dioxide		759
Carbonate		760
Chloride		763
CO_3 Solids		
Fluoride		765
Hydroxide		767
Nitrate as N		605
Nitrite as N		606
Phosphorus, Ortho as P		607
Silica, dissolved as SiO_2		750
Sulfate		772
pH 1:1	6.6	
% Solids	80.0	

TOTAL ANIONS ______
GRAND TOTAL ______

Tot. Phosphorus		785
Total Alk. as $CaCO_3$		752
T. Hdns. as $CaCO_3$		754
Surfactant as MBAS		773
Turbidity, as NTU		757
Sp. Gravity		608

TOTAL METALS ANALYSIS DDM

5 CATIONS	mg/l	Code
Aluminum		800
Arsenic	14.	660
Barium	217.	661
Beryllium	1.2	801
Cadmium	.9	662
Chromium	24.	663
Cobalt	8.8	804
Copper		664
Gold		700
Iron		755
Lead	52.9	665
Manganese		666
Mercury	1.7	739
Molybdenum	[illegible]	802
Nickel	23.6	657
Selenium	< 2.0	668
Silver	1.3	669
Uranium		601
Vanadium		803
Zinc	132.	670

dry wt basis

6 RADIOLOGICS

	pCi/l			pCi/l	
Alpha, gross		621	^{89}Sr		633
Beta, gross		623	^{131}I		636
Tritium, ^3H		625	^{134}Cs		637
^{226}Radium		627	^{137}Cs		639
^{228}Radium		629			
^{90}Sr		631			

INTERPRETATION OF ANALYSES:
Remarks:

RECEIVED
SEP 6 1984
Utah State Dept. of Environmental Health

Based on State Standards, this sample was: Satisfactory / Conditional / Unsatisfactory

B.O.D.$_5$			
Tot. Sus. Solids			
M.P.N. Total Coliform.			
M.P.N. Fecal Coliform.			

Analysis Approved By: ______ Date: ______

By ______ ENVIRONMENTAL HEALTH

30 Aug 84 \ [illegible]

138

Pest. / Rad. / Bact. / Spec. (X) / Nut / BOD

Date Recd.: ______ Received By: ______

UTAH STATE DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Sample No.: 41841930

Station No. ______ 702

Water Syst. No. Source No. ______ 703 / 704

Sample Source: 14 (Trail?) County: 12/21

01 Spring, 14 Other, 02 Well, 15 Tunnel, 03 Stream, 16 Artesian Well, 04 Lake, 05 Dist. Syst., 19 Swimming Pool, 07 Effluent, 08 Storm sewer

Counties: 01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

Current use ______ 706; Proposed use ______ 705
1. Culinary 2. Agriculture 3. Industrial 4. Other

Cost Code: 305 770

Date Collected: 84 06 05 (yr. mo. dy.) Time Collected: 1032 (24-hour clock)

Water Rights No. ______ 707

Exact Description of sampling point: [illegible] 646

Supply Owned by ______ 712 Sample Type ______ 710

Sample Collected by: [illegible] 713

SEND REPORT TO: Phone 533-4145
[illegible] 715
150 WEST NORTH TEMPLE 648
SLC UTAH 84110 717 (zip code)

1 FIELD TESTS

Temperature (°C)	732		CO2, mg/l	572
D.O., mg/l	793		Depth, m	609
Sp. Cond., µmhos	653		Cl Resid., mg/l	753
pH	651		Flow, MGD	652
Sp. Gravity	608		Flow, GPM	604
Transparency, m	649		Flow, cfs	659

2 Temperature (°C) 650 pH 782 — WASTEWATER ANALYSIS — BACT. LAB. No.

	mg/l			mg/l			
B.O.D.5	794	T.O.C.	671		M.P.N. Total Coliforms/100ml		658
Tot. Sus. Solids	787	C.O.D.	777		M.P.N. Fecal Coliforms/100ml		657
NO2+NO3,N	602	Cyanide	775		Fecal Strep C/100ml.		656
T.K.N.	778	Phenolics	783		M.F. Total Coliforms/100ml.		654
Oil & Grease	780	Sulfide	672		M.F. Fecal Coliforms/100ml.		655
					Plate Count-Org./ml.		599

3 Filtered / Unfiltered — CATIONS

me/l	CATIONS	mg/l	ug/l (ppb)	Code
	Ammonia as N			722
	Arsenic			723
	Barium			724
	Boron			725
	Cadmium			727
3.36	Calcium	67		728
	Chromium			729
	Chromium, Hex. as Cr		< 5	730
	Copper			732
	Iron, dissolved			733
	Lead			734
1.28	Magnesium	16		737
	Manganese			738
	Nickel			740
.08	Potassium	3		742
	Selenium			743
	Silver			744
1.17	Sodium	27		745
	Zinc			749
5.89	TOTAL CATIONS			

Sp. Cond. µmhos/cm.	530	762
TDS @ 180°C	400	786

4 CHEMICAL ANALYSIS — pH, units 7.0

me/l	ANIONS	mg/l	Code
	Bicarbonate	304	758
	Carbon Dioxide	21	759
	Carbonate	0	760
.54	Chloride	19	763
4.0	CO3 Solids	100	
	Fluoride	0.32	765
	Hydroxide	000	767
	Nitrate as N	0.05	605
	Nitrite as N	< 0.01	606
	Phosphorus, Ortho as P	.06	607
	Silica, dissolved as SiO2	26	750
1.46	Sulfate	70	772
6.00	TOTAL ANIONS		
	GRAND TOTAL		

Tot. Phosphorus		785
Total Alk. as CaCO3	250	752
T. Hdns. as CaCO3	232	754
Surfactant as MBAS		773
Turbidity, as NTU	.25	757
Sp. Gravity		608

TOTAL METALS ANALYSIS

5 CATIONS	mg/l	Code
Aluminum	0.11	800
Arsenic	.0250	660
Barium	< .05	661
Beryllium	< .01	801
Cadmium	< .011	662
Chromium	< .02	663
Cobalt	< .11	804
Copper	.013	664
Gold		700
Iron	.23	755
Lead	.110	665
Manganese	.012	656
Mercury	< .0001	739
Molybdenum	< .1	802
Nickel	<	667
Selenium	.0012	668
Silver	< .01	669
Uranium		601
Vanadium	< .13	803
Zinc	.2110	670

6 RADIOLOGICS

	pCi/l			pCi/l	
Alpha, gross	621	^{89}Sr		633
Beta, gross	623	^{131}I		635
Tritium, ^3H	625	^{134}Cs		637
^{226}Radium	627	^{137}Cs		639
^{228}Radium	629			
^{90}Sr	631			

Analyses Approved By: KSW Date: 840629

INTERPRETATION OF ANALYSES:
Remarks:

Based on State Standards, this sample was: Satisfactory / Conditional / Unsatisfactory
B.O.D.5
Tot. Sus. Solids
M.P.N. Total Coliform.
M.P.N. Fecal Coliform.

By ______ ENVIRONMENTAL HEALTH

J. Oman 17-July-84

Rev. 3/82 Hw84139

Field No. ______

[X] TC [X] TM [ ] Nut [ ] Pest. [ ] Rad. [ ] Bact. [X] Spec.
[ ] PC [ ] PM [ ] BOD

Date Recd.: ______ Received By: ______

UTAH STATE DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

JUN 4 84 41931

Sample No. 701

Storet No. ______ 702

Water Syst. No. Source No. ______ 703 704

Date Collected ______ yr. mo. dy. 714

Time Collected 1040 (24-hour clock) 616

Water Rights No. ______ 707

Exact Description of sampling Point: Richardson Flat Barrel at On Upper side of RR Near Pond Near Heber Highway 646

Supply Owned by ______ 712

Sample Type ______ 710

Sample Collected by: D Ueckert C Hobson 713

SEND REPORT TO: Phone 533-4145

Jim Salmon 716
150 West North Temple 648
SLC UT 84110 717 (zip code)

Sample Source: 14 (715)
01 Spring, 02 Well, 03 Stream, 04 Lake, 06 Dist. syst., 07 Effluent, 08 Storm sewer, 14 Other, 15 Tunnel, 18 Artesian well, 19 Swimming pool

County: 22 (611)
01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

Current use ______ 708
Proposed use 4 709
1. Culinary 2. Agriculture 3. Industrial 4. Other

Cost Code 365 770

Utah State Division of Environmental Health

1 FIELD TESTS

Temperature (°C)		792	CO_2, mg/l		572
D.O., mg/l		793	Depth, m		609
Sp. Cond. μ mhos		653	Cl Resid., mg/l		753
pH		651	Flow, MGD		652
Sp. Gravity		608	Flow, GPM		604
Transparency, m		649	Flow, cfs		659

2 Temperature (°C) ______ 650 pH ______ 782 WASTEWATER ANALYSIS — BACT. LAB. No.

	mg/l			mg/l				
B.O.D.$_5$		794	T.O.C.		671	M.P.N. Total Coliforms/100ml		658
Tot. Sus. Solids		787	C.O.D.		777	M.P.N. Fecal Coliforms/100ml		657
NO_2+NO_3,N		602	Cyanide		775	Fecal Strep C/100ml.		656
T.K.N.		778	Phenolics		783	M.F. Total Coliforms/100ml.		654
Oil & Grease		780	Sulfide		672	M.F. Fecal Coliforms/100ml.		655
						Plate Count-Org./ml.		599

3 [ ] Filtered [ ] Unfiltered

me/l	CATIONS	mg/l	μg/l (ppb)	Code
	Ammonia as N			722
	Arsenic			723
	Barium			724
	Boron			725
	Cadmium			727
7.40	Calcium	148		728
	Chromium			729
	Chromium, Hex. as Cr		< 5	730
	Copper			732
	Iron, dissolved			733
	Lead			734
1.44	Magnesium	24		737
	Manganese			738
	Nickel			740
.18	Potassium	7		742
	Selenium			743
	Silver			744
1.60	Sodium	37		745
	Zinc			749
11.2	TOTAL CATIONS			

Sp. Cond. μmhos/cm.	1060	762
TDS @ 180°C	882	786

4 CHEMICAL ANALYSIS — pH, units 7.5

me/l	ANIONS	mg/l	Code
	Bicarbonate	118	758
	Carbon Dioxide	6	759
	Carbonate	0	760
3.95	Chloride	146	763
1.24	CO_3 Solids	58	
	Fluoride	0.35	765
	Hydroxide	0000	767
	Nitrate as N	0.14	605
	Nitrite as N	< 0.01	606
	Phosphorus, Ortho as P	.01	607
	Silica, dissolved as SiO_2	3	750
5.33	Sulfate	256	772
11.2	TOTAL ANIONS		
	GRAND TOTAL		
	Tot. Phosphorus		785
	Total Alk. as $CaCO_3$	97	752
	T. Hdns. as $CaCO_3$	470	754
	Surfactant as MBAS		773
	Turbidity, as NTU	140	757
	Sp. Gravity		608

TOTAL METALS ANALYSIS ppm

5 CATIONS	mg/l	Code
Aluminum		800
Arsenic	.406	660
Barium	.64	661
Beryllium	< .01	801
Cadmium	.032	662
Chromium	< .1	663
Cobalt		804
Copper		664
Gold		700
Iron		765
Lead	9.5	665
Manganese		666
Mercury	< .0002	739
Molybdenum	< .2	802
Nickel	< .1	667
Selenium	< .0005	668
Silver	.034	669
Uranium		601
Vanadium		803
Zinc	5.6	670

6 RADIOLOGICS

	pCi/l			pCi/l	
Alpha, gross		621	^{89}Sr		633
Beta, gross		623	^{131}I		636
Tritium, ^3H		625	^{134}Cs		637
^{226}Radium		627	^{137}Cs		639
^{228}Radium		629			
^{90}Sr		631			

Analyses Approved By: REH Date: 840629

INTERPRETATION OF ANALYSES:
Remarks:

Based on State Standards, this sample was: (Satisfactory / Conditional / Unsatisfactory)

B.O.D.$_5$
Tot. Sus. Solids
M.P.N. Total Coliform.
M.P.N. Fecal Coliform.

By ______ ENVIRONMENTAL HEALTH

Rev. 3/82 HW84140

Field No.

TC PC TM PM Nut BOD Pest. Rad. Bact. Spec.

Date Recd.:

Received By:

UTAH STATE DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Sample No. 484841932

Storet No. 702

Water Syst. No. Source No. 703 704

Date Collected 8 4 0 8 09 714 (yr. mo. dy.)

Time Collected 1040 (24-hour clock) 715

Water Rights No. 707

Exact Description of Sampling Point

Supply Owned by 713

Sample Type 710

Sample Collected by 713

SEND REPORT TO: Phone 533-1415

715

648

717 zip code

Sample Source 714: 01 Spring, 02 Well, 03 Stream, 04 Lake, 06 Dist. syst., 07 Effluent, 08 Storm sewer, 14 Other, 15 Tunnel, 18 Artesian well, 19 Swimming pool

County 699: 01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

Current use 708

Proposed use 27 709

1. Culinary
2. Agriculture
3. Industrial
4. Other

Cost Code 365 770

1 FIELD TESTS

Temperature (°C)	792	CO_2, mg/l	572
D.O., mg/l	793	Depth, m	609
Sp. Cond. µmhos	653	Cl Resid., mg/l	753
pH	651	Flow, MGD	652
Sp. Gravity	608	Flow, GPM	604
Transparency, m	649	Flow, cfs	658

2 WASTEWATER ANALYSIS

Temperature(°C) 650 pH 782 BACT. LAB. No.

	mg/l		mg/l		
B.O.D.$_5$	794	T.O.C.	671	M.P.N. Total Coliforms/100ml	658
Tot. Sus. Solids	787	C.O.D.	777	M.P.N. Fecal Coliforms/100ml	657
NO_2+NO_3.N	602	Cyanide	775	Fecal Strep C/100ml.	656
T.K.N.	778	Phenolics	783	M.F. Total Coliforms/100ml.	654
Oil & Grease	780	Sulfide	672	M.F. Fecal Coliforms/100ml.	655
				Plate Count-Org./ml.	599

3 CATIONS

Filtered / Unfiltered

me/l	CATIONS	mg/l	ug/l (ppb)	
	Ammonia as N			722
	Arsenic			723
	Barium			724
	Boron			725
	Cadmium			727
11.4	Calcium	228		728
	Chromium			729
	Chromium, Hex. as Cr	< 5		730
	Copper			732
	Iron, dissolved			733
	Lead			734
4.60	Magnesium	56		737
	Manganese			738
	Nickel			740
.05	Potassium	2		742
	Selenium			743
	Silver			744
1.56	Sodium	36		745
	Zinc			749
17.6	TOTAL CATIONS			

Sp. Cond. µmhos/cm. 1400 762

TDS @ 180°C 1246 786

4 CHEMICAL ANALYSIS

pH, units 7.7

me/l	ANIONS	mg/l	
	Bicarbonate	216	758
	Carbon Dioxide	9	759
	Carbonate	0	760
.90	Chloride	32	763
2.3	CO_3 Solids	141	
	Fluoride	0.34	765
	Hydroxide	0	767
	Nitrate as N	0.06	605
	Nitrite as N	< 0.01	606
	Phosphorus, Ortho as P	0.1	607
	Silica, dissolved as SiO_2	33	750
12.16	Sulfate	584	772
17.7	TOTAL ANIONS		
	GRAND TOTAL		

Tot. Phosphorus			785
Total Alk. as $CaCO_3$	213		752
T. Hdns. as $CaCO_3$	800		754
Surfactant as MBAS			773
Turbidity, as NTU	25		757
Sp. Gravity			608

TOTAL METALS ANALYSIS

5	CATIONS	mg/l	ug/l (ppb)	
	Aluminum			800
	Arsenic		0.02	650
	Barium	< .05		651
	Beryllium	< .01		801
	Cadmium	< .01		652
	Chromium	< .1		653
	Cobalt	< .1		804
	Copper			654
	Gold			700
	Iron			755
	Lead	< .1		655
	Manganese			656
	Mercury	< .0002		739
	Molybdenum	< .2		802
	Nickel	< .1		657
	Selenium	.005		658
	Silver	< .01		659
	Uranium,			601
	Vanadium			803
	Zinc	.17		670

6 RADIOLOGICS

	pCi/l		pCi/l	
Alpha, gross	621	^{89}Sr	633	
Beta, gross	623	^{131}I	635	
Tritium, ^3H	625	^{134}Cs	637	
^{226}Radium	627	^{137}Cs	639	
^{228}Radium	629			
^{90}Sr	631			

Analyses Approved By: REG Date: 840C29

INTERPRETATION OF ANALYSES:

Remarks:

Based on State Standards, this sample was:

	Satisfactory	Conditional	Unsatisfactory
B.O.D.$_5$			
Tot. Sus. Solids			
M.P.N. Total Coliform.			
M.P.N. Fecal Coliform.			

By ENVIRONMENTAL HEALTH

11054141 ?Soil Ph

Rev. 3/82
Field No.

[ ] TC [X] TM [ ] Nut [ ] Pest. [ ] Rad. [ ] Bact. [ ] Spec.
[ ] PC [ ] PM [ ] BOD

Date Recd.:
Received By:

UTAH STATE DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Sample No. 841833 (701)

Street No. — Water Syst. No. Source No.
Date Collected (702) yr. mo. dy. — Time Collected 11:00 (24-hour clock) — Water Rights No. (707)

Exact Description of Sampling Point: ... Brasada Flat Trail ... circle left windblow dust — center of tailings

Supply Owned by (712) — Sample Type (710)

Sample Collected by: T Hebdon (713)

SEND REPORT TO: Phone 533-4145
Tim Sollmon - Bur Soil Haz
150 W North Temple (648)
SLC Utah (717)
zip code

Sample Source: 14 (719)
01 Spring, 02 Well, 03 Stream, 04 Lake, 06 Dist. syst., 07 Effluent, 08 Storm sewer, 14 Other, 15 Tunnel, 18 Artesian well, 19 Swimming pool

County: 27 (611)
01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

Current use (708) — Proposed use (709)
1. Culinary 2. Agriculture 3. Industrial 4. Other

Cost Code 365 (770)

1 FIELD TESTS

Temperature (°C)	792	CO_2, mg/l	572
D.O., mg/l	793	Depth, m	609
Sp. Cond. µmhos	653	Cl Resid., mg/l	753
pH	651	Flow, MGD	652
Sp. Gravity	608	Flow, GPM	604
Transparency, m	649	Flow cfs	659

2 Temperature (°C) 650 — pH 782 — WASTEWATER ANALYSIS — BACT. LAB. No.

	mg/l		mg/l		
B.O.D.$_5$	794	T.O.C.	671	M.P.N. Total Coliforms/100ml	658
Tot. Sus. Solids	787	C.O.D.	777	M.P.N. Fecal Coliforms/100ml	657
NO_2+NO_3.N	602	Cyanide	775	Fecal Strep C/100ml.	656
T.K.N.	778	Phenolics	783	M.F. Total Coliforms/100ml.	654
Oil & Grease	780	Sulfide	672	M.F. Fecal Coliforms/100ml.	655
				Plate Count-Org./ml.	599

3 Filtered / Unfiltered — CATIONS (me/l, mg/l, ug/l (ppb))

Cation	Code
Ammonia as N	722
Arsenic	723
Barium	724
Boron	725
Cadmium	727
Calcium	728
Chromium	729
Chromium, Hex. as Cr	730
Copper	732
Iron, dissolved	733
Lead	734
Magnesium	737
Manganese	738
Nickel	740
Potassium	742
Selenium	743
Silver	744
Sodium	745
Zinc	749

TOTAL CATIONS

Sp. Cond. µmhos/cm. 762
TDS @ 180°C 786

4 CHEMICAL ANALYSIS — pH, units

ANIONS (me/l, mg/l)	Code
Bicarbonate	758
Carbon Dioxide	759
Carbonate	760
Chloride	763
CO_3 Solids	
Fluoride	765
Hydroxide	767
Nitrate as N	605
Nitrite as N	606
Phosphorus, Ortho as P	607
Silica, dissolved as SiO_2	750
Sulfate	772
PH 1:1	7.2

TOTAL ANIONS
GRAND TOTAL

	Code
Tot. Phosphorus	785
Total Alk. as $CaCO_3$	752
T. Hdns. as $CaCO_3$	754
Surfactant as MBAS	773
Turbidity, as NTU	757
Sp. Gravity	608

TOTAL METALS ANALYSIS (PPM)

5 CATIONS mg/l ~~ug/l (ppb)~~

Cation	Value	Code
Aluminum		800
Arsenic	25.2	660
Barium	< 35.	661
Beryllium	.4	801
Cadmium	72.3	662
Chromium	5.3	663
Cobalt	3.5	804
Copper		664
Gold		700
Iron		755
Lead	3960.	665
Manganese		666
Mercury	.32	739
Molybdenum	3.5	802
Nickel	6.1	667
Selenium	< 1.7	668
Silver	14.2	669
Uranium		601
Vanadium		803
Zinc	1580.	670

6 RADIOLOGICS

	pCi/l			pCi/l	
Alpha, gross	621	^{89}Sr		633
Beta, gross	623	^{131}I		635
Tritium, ^3H	625	^{134}Cs		637
^{226}Radium	627	^{137}Cs		639
^{228}Radium	629			
^{90}Sr	631			

Analysis Approved By: — Date:

INTERPRETATION OF ANALYSES:
Remarks: RECEIVED
SEP 3 1984
Utah State Div. Of Environmental Health

By ENVIRONMENTAL HEALTH

Based on State Standards, this sample was: Satisfactory / Conditional / Unsatisfactory
B.O.D.$_5$
Tot. Sus. Solids
M.P.N. Total Coliform.
M.P.N. Fecal Coliform.

Rec'd [illegible] 1W-8442

Pest. / Rad. / Bact. / Spec.

Date rec'd: _____

Received By: _____

UTAH STATE DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Job #: 841934

Sample No. 701

Water Syst. No. | Source No. | Source 739 | County 611 | Current use 708 | Proposed use 709

Date Collected 702 | Time Collected (24-hour clock) | Water Rights No. 707

01 Spring, 02 Well, 03 Stream, 04 Lake, 05 Dist. syst., 06 Effluent, 07 Storm sewer, 08 Other, 09 Tunnel, 10 Artesian well, 11 Swimming pool

01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

1. Culinary
2. Agriculture
3. Industrial
4. Other

Cost Code 3165 770

Exact Description of Sampling Point 646

Elliot Hall / Higgins

Supply Owned by 712 | Sample Type 710

Collected By 713

D Holbrook

SEND REPORT TO: Phone 533 4125 716

J. M. Solomon - Bur. Sol. Haz.

150 W. North Temple 648

SLC Utah 717

zip code

1 FIELD TESTS

Temperature (°C)	792	CO_2, mg/l	572
D.O., mg/l	750	Depth, m	609
Sp. Cond., µmhos	653	Cl Resid., mg/l	753
pH	651	Flow, MGD	652
Sp. Gravity	608	Flow, GPM	604
Transparency, m	645	Flow, cfs	659

2 WASTEWATER ANALYSIS

Temperature (°C) 650 | pH 782 | BACT. LAB. No.

	mg/l		mg/l		
$B.O.D._5$	794	T.O.C.	671	M.P.N. Total Coliforms/100ml	658
Tot. Sus. Solids	787	C.O.D.	777	M.P.N. Fecal Coliforms/100ml	657
NO_2-NO_3.N	602	Cyanide	775	Fecal Strep C/100ml.	656
T.K.N.	778	Phenolics	783	M.F. Total Coliforms/100ml.	654
Oil & Grease	780	Sulfide	672	M.F. Fecal Coliforms/100ml.	655
				Plate Count-Org./ml.	599

3 CATIONS

Filtered | Unfiltered

me/l		mg/l	ug/l (ppb)	
	Ammonia as N			722
	Arsenic			723
	Barium			724
	Boron			725
	Cadmium			727
	Calcium			728
				729
	Chromium, Hex. as Cr			730
	Copper			732
	Iron, dissolved			733
	Lead			734
	Magnesium			737
	Manganese			738
	Mercury			740
				742
	Nickel			743
				744
	Potassium			745
	Zinc			749

TOTAL CATIONS _____ _____

Sp. Cond. µmhos/cm. 762

TDS @ 180°C 786

4 CHEMICAL ANALYSIS

pH, units

me/l	ANIONS	mg/l	
	Bicarbonate		758
	Carbon Dioxide		759
	Carbonate		760
	Chloride		763
	CO_3 Solids		
	Fluoride		765
	Hydroxide		767
	Nitrate as N		605
	Nitrite as N		606
	Phosphorus, Ortho as P		607
	Silica, dissolved as SiO_2		750
	Sulfate		772
	pH 1:1	4.4	
	TOTAL ANIONS		
	GRAND TOTAL		

Tot. Phosphorus		785
Total Alk. as $CaCO_3$		752
T. Hons. as $CaCO_3$		754
Surfactant as MBAS		773
Turbidity, as NTU		757
Sp. Gravity		608

TOTAL METALS ANALYSIS DDM

5 CATIONS mg/l

Aluminum		800
Arsenic	1159	660
Barium	39	661
Beryllium	< .01	801
Cadmium	19.2	662
Chromium	7.6	663
Cobalt	142.4	804
Copper		664
Gold		700
Iron		755
Lead	2150	665
Manganese		666
Mercury		739
Molybdenum	5.1	802
Nickel	2.1	667
Selenium	5.5	668
Silver	50.6	669
Uranium		601
Vanadium		803
Zinc	10850	670

6 RADIOLOGICS

	pCi/l		pCi/l	
Alpha, gross		621	^{89}Sr	633
Beta, gross		623	^{131}I	635
Tritium, ^3H		625	^{134}Cs	637
^{226}Radium		627	^{137}Cs	639
^{228}Radium		629		
Gr.		631		

Date: _____

INTERPRETATION OF ANALYSES:
Remarks:

RECEIVED
SEP 6 1984
Utah State Div. O[illegible]

By _____
ENVIRONMENTAL HEALTH

Based on State Standards, this sample was:

	Satisfactory	Questionable	Unsatisfactory
B.O.D.$_5$			
Tot. Sus. Solids			
M.P.N. Total Coliform			
M.P.N. Fecal Coliform			

[illegible] #3   [illegible] Soil PH

Rev. 3/82
Field No. ______

TC | TM | Nut | Pest.
PC | PM | BOD | Rad.
Bact.
Spec.

Date Recd.: ______
Received By: ______

UTAH STATE DEPARTME. OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Sample No. 841535 701

Field	Entry	Code
Storet No.		702
Water Syst. No. Source No.		703 / 704
Date Collected	[illegible]	
Time Collected (24-hour clock)	1120	
Water Rights No.		707
Exact Description of sampling Point	[illegible]	646
Supply Owned by		712
Sample Type		710
Sample Collected by	[illegible]	713

SEND REPORT TO: Phone 533-4145

[illegible] 715
1150 W North Temple 648
SLC Utah 717
zip code

Sample Source: 14 (719)
01 Spring, 02 Well, 03 Stream, 04 Lake, 06 Dist. syst., 07 Effluent, 08 Storm sewer, 14 Other, 15 Tunnel, 18 Artesian well, 19 Swimming pool

County: 22 (611)
01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

Current use — 3 (708)
Proposed use — (709)
1. Culinary
2. Agriculture
3. Industrial
4. Other

Cost Code 265 (770)

1 FIELD TESTS

Test	Code	Test	Code
Temperature (°C)	792	CO_2, mg/l	572
D.O., mg/l	793	Depth, m	609
Sp. Cond. μ mhos	653	Cl Resid., mg/l	753
pH	651	Flow, MGD	652
Sp. Gravity	608	Flow, GPM	604
Transparency, m	649	Flow, cfs	658

2 Temperature (°C) 650 pH 782 WASTEWATER ANALYSIS — BACT. LAB. No.

mg/l	Code	mg/l	Code		Code
$B.O.D._5$	794	T.O.C.	671	M.P.N. Total Coliforms/100ml	658
Tot. Sus. Solids	787	C.O.D.	777	M.P.N. Fecal Coliforms/100ml	657
NO_2+NO_3,N	602	Cyanide	775	Fecal Strep C/100ml.	656
T.K.N.	778	Phenolics	783	M.F. Total Coliforms/100ml.	654
Oil & Grease	780	Sulfide	672	M.F. Fecal Coliforms/100ml.	655
				Plate Count-Org./ml.	599

3 Filtered | Unfiltered

CATIONS	Code
Ammonia as N (mg/l)	722
Arsenic (ug/l)	723
Barium	724
Boron	725
Cadmium	727
Calcium (mg/l)	728
Chromium	729
Chromium, Hex. as Cr	730
Copper	732
Iron, dissolved	733
Lead	734
Magnesium (mg/l)	737
Manganese	738
Nickel	740
Potassium (mg/l)	742
Selenium	743
Silver	744
Sodium (mg/l)	745
Zinc	749

TOTAL CATIONS ______

	Code
Sp. Cond. μmhos/cm.	762
TDS @ 180°C	786

4 CHEMICAL ANALYSIS — pH, units

ANIONS (mg/l)	Code
Bicarbonate	758
Carbon Dioxide	759
Carbonate	760
Chloride	763
CO_3 Solids	
Fluoride	765
Hydroxide	767
Nitrate as N	605
Nitrite as N	606
Phosphorus, Ortho as P	607
Silica, dissolved as SiO_2	750
Sulfate	772
pH 1:1	5.0

TOTAL ANIONS ______
GRAND TOTAL ______

	Code
Tot. Phosphorus	785
Total Alk. as $CaCO_3$	752
T. Hdns. as $CaCO_3$	754
Surfactant as MBAS	773
Turbidity, as NTU	757
Sp. Gravity	608

TOTAL METALS ANALYSIS ppm

5 CATIONS	mg/l	Value	Code
Aluminum			600
Arsenic		< 16.7	660
Barium		< 33	661
Beryllium		< .14	801
Cadmium		44.7	662
Chromium		12.7	663
Cobalt		16.7	804
Copper			664
Gold			700
Iron			785
Lead		3771.0	665
Manganese			666
Mercury		1.24	739
Molybdenum		1.7	802
Nickel		13.5	667
Selenium		< 1.4	668
Silver		63.5	669
Uranium			601
Vanadium			803
Zinc		1670.0	670

6 RADIOLOGICS

	pCi/l	Code		pCi/l	Code
Alpha, gross		621	^{89}Sr		633
Beta, gross		623	^{131}I		635
Tritium, ^3H		625	^{134}Cs		637
^{226}Radium		627	^{137}Cs		639
^{228}Radium		629			
^{90}Sr		631			

INTERPRETATION OF ANALYSES:
Remarks:

SEP 6 1984
Utah State Div. Of
Environmental Health

By ______ ENVIRONMENTAL HEALTH

Based on State Standards, this sample was:

	Satisfactory	Conditional	Unsatisfactory
$B.O.D._5$			
Tot. Sus. Solids			
M.P.N. Total Coliform.			
M.P.N. Fecal Coliform.			

Analyses Approved By: ______ Date: ______

30-Aug-84 [illegible] Oman

HW84144

Rev. 3/82
Field No. _____
☒ TC ☒ TM ☐ Nut ☐ Pest. ☐ Rad. ☐ Bact. ☐ Spec.
☐ PC ☐ PM ☐ BOD

Date Recd.: _____
Received By: _____

UTAH STATE DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Sample No. 484841936 701

Storet No. 702 | Water Syst. No. Source No. 703 704
Date Collected 84 04 04 705 (yr. mo. dy.) | Time Collected 1130 706 (24-hour clock) | Water Rights No. 707
Exact Description of sampling Point: Toe of Richardson Flat tailings dam-ground water seep
Supply Owned by 712 | Sample Type 710
Sample Collected by: H Hebdon 713
SEND REPORT TO: Phone 533-4145
Tim Sullivan-Bur Soil Hazl
150 W North Temple 648
SLC Utah 717
zip code

Sample Source 719: 01 Spring, 02 Well, 03 Stream, 04 Lake, 06 Dist. syst., 07 Effluent, 08 Storm sewer, 14 Other, 15 Tunnel, 18 Artesian well, 19 Swimming pool

22 County 641: 01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

Current use 708: 1. Culinary, 2. Agriculture, 3. Industrial, 4. Other
Proposed use 709
Cost Code B65 770

1 FIELD TESTS

Temperature (°C) 792		CO_2, mg/l 572	
D.O., mg/l 793		Depth, m 609	
Sp. Cond. µmhos 653		Cl Resid., mg/l 753	
pH 651		Flow, MGD 652	
Sp. Gravity 608		Flow, GPM 604	
Transparency, m 649		Flow, CFS 659	

2 Temperature(°C) 650 | pH 782 | WASTEWATER ANALYSIS | BACT. LAB. No.

	mg/l		mg/l		
B.O.D.$_5$	794	T.O.C.	671	M.P.N. Total Coliforms/100ml	658
Tot. Sus. Solids	787	C.O.D.	777	M.P.N. Fecal Coliforms/100ml	657
NO_2+NO_3.N.	602	Cyanide	775	Fecal Strep C/100ml.	656
T.K.N.	778	Phenolics	783	M.F. Total Coliforms/100ml.	654
Oil & Grease	780	Sulfide	672	M.F. Fecal Coliforms/100ml.	655
				Plate Count-Org./ml.	599

3 ☐ Filtered ☐ Unfiltered | 4 CHEMICAL ANALYSIS | pH, units 7.7

me/l	CATIONS	mg/l	ug/l (ppb)		me/l	ANIONS	mg/l	
	Ammonia as N			722		Bicarbonate	32	758
	Arsenic			723		Carbon Dioxide	10	759
	Barium			724		Carbonate	0	760
	Boron			725	.90	Chloride	32	763
	Cadmium			727	5.38	CO_3 Solids	129	
36.16	Calcium	612		728		Fluoride	0.48	765
	Chromium			729		Hydroxide	0.00	767
	Chromium, Hex. as Cr		<5	730		Nitrate as N	0.03	605
	Copper			732		Nitrite as N	<0.01	606
	Iron, dissolved			733		Phosphorus, Ortho as P	0.01	607
	Lead			734		Silica, dissolved as SiO_2	19	750
9.46	Magnesium	114		737	38.80	Sulfate	1863	772
	Manganese			738				
	Nickel			740	45.			
.33	Potassium	13		742		TOTAL ANIONS		
	Selenium			743		GRAND TOTAL		
	Silver			744				
2.05	Sodium	48		745		Tot. Phosphorus		785
	Zinc			749		Total Alk. as $CaCO_3$	214	752
43.	TOTAL CATIONS					T. Hard. as $CaCO_3$	2000	754
						Surfactant as MBAS		773
						Turbidity, as NTU	1.0	757
						Sp. Gravity		608

☐ Sp. Cond. µmhos/cm. 1500 762
☐ TDS @ 180°C 3098 786

TOTAL METALS ANALYSIS (mg/l)

5 CATIONS	mg/l	
Aluminum		800
Arsenic	.0488	660
Barium	<.05	661
Beryllium	<.01	801
Cadmium	.031	662
Chromium	<.1	663
Cobalt	<.1	804
Copper		664
Gold		700
Iron		755
Lead	<.1	665
Manganese		666
Mercury	<.0001	739
Molybdenum	<.2	802
Nickel	<.1	667
Selenium	.0015	668
Silver	<.012	669
Uranium		601
Vanadium		803
Zinc	.77	670

6 RADIOLOGICS

	pCi/l		pCi/l	
Alpha, gross	621	^{89}Sr	633	
Beta, gross	623	^{131}I	635	
Tritium, ^3H	625	^{134}Cs	637	
^{226}Radium	627	^{137}Cs	639	
^{228}Radium	629			
^{90}Sr	631			

INTERPRETATION OF ANALYSES:
Remarks:

Based on State Standards, this sample was: Satisfactory / Conditional / Unsatisfactory

	Satisfactory	Conditional	Unsatisfactory
B.O.D.$_5$			
Tot. Sus. Solids			
M.P.N. Total Coliform.			
M.P.N. Fecal Coliform.			

Analyses Approved By: RSH Date: 840629

By _____ ENVIRONMENTAL HEALTH

Rev. 3/82 HW84145A

Field No.

☒ TC ☐ PC ☒ TM ☐ PM ☐ Nut ☐ BOD ☐ Pest. ☐ Rad. ☐ Bact. ☒ Spec.

Date Recd.: ______ Received By: ______

UTAH STATE DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH
WATER ANALYSES

Sample No. [UB]841937

Field	Value
Storet No.	
Water Syst. No. Source No.	
Date Collected (yr. mo. dy.)	84 06 04
Time Collected (24-hour clock)	1200
Water Rights No.	
Exact Description of sampling Point	SPRING AT SOUTHWEST EXTREME OF [illegible] FLAT
Supply Owned by	
Sample Type	
Sample Collected by	J HEBDON
Send Report To	TIM SALMON / BUREAU SOLID & HAZARDOUS WASTE / 150 W N TEMPLE SLC UT 84110
Phone	533 4145
Sample Source	14
County	22
Current use / Proposed use	4
Cost Code	365

Sample Source: 01 Spring, 02 Well, 03 Stream, 04 Lake, 06 Dist. syst., 07 Effluent, 08 Storm sewer, 14 Other, 15 Tunnel, 18 Artesian well, 19 Swimming pool

Use: 1. Culinary 2. Agriculture 3. Industrial 4. Other

1 FIELD TESTS

Temperature (°C) 792; D.O., mg/l 793; Sp. Cond. µmhos 653; pH 651; Sp. Gravity 608; Transparency, m 649; CO_2, mg/l 572; Depth, m 609; Cl Resid., mg/l 753; Flow, MGD 652; Flow, GPM 604; Flow, cfs 659

2 WASTEWATER ANALYSIS

Temperature (°C) 650; pH 782; BACT. LAB. No.

B.O.D.5 794; Tot. Sus. Solids 787; NO_2+NO_3,N 602; T.K.N. 778; Oil & Grease 780; T.O.C. 671; C.O.D. 777; Cyanide 775; Phenolics 783; Sulfide 672; M.P.N. Total Coliforms/100ml 658; M.P.N. Fecal Coliforms/100ml 657; Fecal Strep C/100ml 656; M.F. Total Coliforms/100ml 654; M.F. Fecal Coliforms/100ml 655; Plate Count-Org./ml 599

3 CATIONS (Filtered / Unfiltered)

me/l	CATIONS	mg/l	ug/l (ppb)	Code
	Ammonia as N			722
	Arsenic			723
	Barium			724
	Boron			725
	Cadmium			727
19.0	Calcium	380		728
	Chromium			729
	Chromium, Hex. as Cr		< 5	730
	Copper			732
	Iron, dissolved			733
	Lead			734
9.44	Magnesium	128		737
	Manganese			738
	Nickel			740
.03	Potassium	1		742
	Selenium			743
	Silver			744
1.34	Sodium	31		745
	Zinc			749
31.0	TOTAL CATIONS			

Sp. Cond. µmhos/cm. 2380 (762)

TDS @ 180°C 2284 (786)

4 CHEMICAL ANALYSIS

pH, units 3.3

me/l	ANIONS	mg/l	Code
	Bicarbonate	< 1	758
	Carbon Dioxide	< 1	759
	Carbonate	< 1	760
.93	Chloride	33	763
< 1	CO_3 Solids	< 1	
	Fluoride	1.63	765
	Hydroxide	< 1	767
	Nitrate as N	0.61	605
	Nitrite as N	< 0.01	606
	Phosphorus, Ortho as P	.02	607
	Silica, dissolved as SiO_2	57	750
30.69	Sulfate	1473	772
31.6	TOTAL ANIONS		
	GRAND TOTAL		

		mg/l	Code
	Tot. Phosphorus		785
	Total Alk. as $CaCO_3$	< 1	752
	T. Hdns. as $CaCO_3$	1450	754
	Surfactant as MBAS		773
	Turbidity, as NTU	1000	757
	Sp. Gravity		608

5 TOTAL METALS ANALYSIS PPM

CATIONS	mg/l
Aluminum	
Arsenic	[.3756]
Barium	< .05
Beryllium	< .01
Cadmium	.120
Chromium	.16
Cobalt	[.12]
Copper	
Gold	
Iron	
Lead	31.8
Manganese	
Mercury	[.028]
Molybdenum	< .2
Nickel	.11
Selenium	.0028
Silver	.144
Uranium	
Vanadium	
Zinc	20

6 RADIOLOGICS

Alpha, gross 621; Beta, gross 623; Tritium, ^3H 625; ^{226}Radium 627; ^{228}Radium 629; ^{90}Sr 631; ^{89}Sr 633; ^{131}I 635; ^{134}Cs 637; ^{137}Cs 639

INTERPRETATION OF ANALYSES:

Remarks:

Based on State Standards, this sample was: Satisfactory / Conditional / Unsatisfactory

B.O.D.5; Tot. Sus. Solids; M.P.N. Total Coliform.; M.P.N. Fecal Coliform.

Analyses Approved By: REL Date: 840629

By ______ ENVIRONMENTAL HEALTH

2572

84 1538

Rev. 7/80 ... 34145 Date Recd.:

Field No. Received By:

UTAH STATE DEPARTMENT OF HEALTH

ENVIRONMENTAL HEALTH

ORGANIC RESIDUE ANALYSES

Sample No.

Storet No.

Water Syst. No. Source No.

Date Collected 702: 84 06 04 (yr. mo. dy.) Time Collected 1250 (24-hour clock)

Water Rights No. 707

Exact Description of sampling Point 646: [illegible]

Supply Owned by 712 Sample Type 710

Sample Collected by 713: [illegible]

SEND REPORT TO: Phone 533 4145

715: [illegible]

648: [illegible]

717: SLC UTAH 84110

Zip code

Sample Source 719

01 Spring, 02 Well, 03 Stream, 04 Lake, 06 Dist. syst., 07 Effluent, 08 Storm sewer, 14 Other, 15 Tunnel, 18 Artesian well, 19 Swimming pool

County 611

01 Beaver, 02 Box Elder, 03 Cache, 04 Carbon, 05 Daggett, 06 Davis, 07 Duchesne, 08 Emery, 09 Garfield, 10 Grand, 11 Iron, 12 Juab, 13 Kane, 14 Millard, 15 Morgan, 16 Piute, 17 Rich, 18 Salt Lake, 19 San Juan, 20 Sanpete, 21 Sevier, 22 Summit, 23 Tooele, 24 Uintah, 25 Utah, 26 Wasatch, 27 Washington, 28 Wayne, 29 Weber

Current use 703

Proposed use 705

1. Culinary
2. Agriculture
3. Industrial
4. Other

365

INTERPRETATION OF ANALYSES:

Remarks:

Based on State Standards, this sample was: Satisfactory / Conditional / Unsatisfactory

By ENVIRONMENTAL HEALTH

8 CHLORINATED HYDROCARBONS ug/l(ppb)

None Detected (<0.1 ppb)

Compound	Code
Dichloropropane	574
Dichloropropene	575
Chlordane	516
Toxaphene	618
Endosulfan	576
Lindane	616
Dicofol	577
Methoxychlor	617
Dieldrin	643
Heptachlor	536
Heptachlor epoxide	615
Beta, BHC	520
Perchlorobenzene, HCB	735
Aldrin	699
Endrin	613
p.p. DDT	515
p.p. DDE	511
p.p. DDD	513
Mirex	580

9 ORGANOPHOSPHATES ug/l(ppb)

None Detected

Compound	Code
Ethyl Parathion	510
Malathion	578
Ethyl Azinphos	512
Methyl Azinphos	534
Diazinon	514
Disulfoton	535
Methyl Parathion	517
Fonofos	518
Phosalone	519
Phosmet	520
Coumaphos	521
Fenthion	522
Phorate	523
Demeton	524
Fensulfothion	525
Dichlorvos	526
Trichlorfon	527
Methyl Oxydemeton	528
Ronnel	529
Crufomate	530
Ethion	531

10 HERBICIDES - GRP1 ug/l(ppb)

	Compound	Result	Code
X	2,4-D	<0.1	619
	Atrazine		582
	Sulfur		532
	Sodium Polysulfide		583
	Bromacil		584
	Simazine		585
	Pronamide		586
	DCPA		587
	EPTC		588
	Dinocap		589
	Dicamba		590
	Diuron		591
	Monuron		592
	Dinoseb		593
	Alachlor		594
	Cycloate		595
	Cyanazine		596
	Nitrofen		597
	Copper Sulfate		533
	Trifluralin		598
	2,4-DB		675
	Terbutryn		676
	Maleic Hydrazide		678
	Dacthal		679

11 HERBICIDES - GRP2 ug/l(ppb)

	Compound	Result	Code
	2, 4, 5- T		681
	Pyrazon		682
	Prometon		683
	Metaborate		684
	Dalapon		665
X	2,4,5-TP	<.0017	620
	Chlorate-Borate		686
	Aminozide		687
	Captan		688
	Glyphosate		689
	Picloram		690
	Methyl Bromide		691
	Methyl Chloride		692
	Amm. Methanarsonate		736
	Terbacil		741
	Paraquat		746
	Acrolein		747
	Xylene		748
	Diquat		751
	Amitrole		756

11 HERBCIDES - GRP2 Cont. ug/l(ppb)

Compound	Code
Prometryn	761
Propazine	764

12 CARBAMATES ug/l(ppb)

None

Compound	Code
Carbofuran	766
Carbaryl	769
Maneb	771
Metalkamate	776
Aldicarb	779
Propoxur	781
Bendiocarb	784
Benomyl	788

13 ORGANOHALOCARBONS ug/l(ppb)

on other sheet

Compound	Code
Chloroform	790
Bromoform	791
Bromodichloromethane	795
Dibromochloromethane	796
Bromomethane	797
Carbon Tetrachloride	798
Chloroethane	799
Chloromethane	500
Dichlorobenzene	501
Dichloroethane	502
Methylene Chloride	503
Vinyl Chloride	504

14 OTHER ug/l(ppb)

None

Compound	Code
PCB 1254	674
PCB 1260	581

Analyses Approved By: Warnick

Date: 6-7-84

APPENDIX 4

HRS SCORE

DRAFT

Facility name: Richardson's Flat Tailings

Location: NW¼ Sec 1 T2S R4E

EPA Region: VIII

Person(s) in charge of the facility: United Park City Mines Co
309 Kerns Bldg
SLC Utah 84101

Name of Reviewer: Don Verbica Date: 09/04/84

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Richardson's Flat contains approx 7 million tons of mill tailings deposited by various local Mines. The tailings are located in an active stream valley The contamination routes scored are surface and ground water, air was not scored

Scores: $S_M = 36.19$ ($S_{gw} = 44.90$ $S_{sw} = 43.64$ $S_a = 0$)

$S_{FE} = 0$

$S_{DC} = 2.50$

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 (45)	1		45	3.1	
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.						
2 Route Characteristics					3.2	
Depth to Aquifer of Concern	0 1 2 3	2		6		
Net Precipitation	0 1 2 3	1		3		
Permeability of the Unsaturated Zone	0 1 2 3	1		3		
Physical State	0 1 2 3	1		3		
Total Route Characteristics Score				15		
3 Containment	0 1 2 3	1		3	3.3	
4 Waste Characteristics					3.4	
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8		
Total Waste Characteristics Score			26	26		
5 Targets					3.5	
Ground Water Use	0 1 2 (3)	3	6	9		
Distance to Nearest Well/Population Served	0 4 6 8 10 / 12 (16) 18 20 / 24 30 32 35 40	1	16	40		
Total Targets Score			22	49		
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5			25740	57,330		
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = 44.90				

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 (45)	1		45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
3 Containment	0 1 2 3	1		3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			26	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 / 12 16 (18) 20 / 24 30 32 35 40	1	18	40	
Total Targets Score			24	55	
6 If line 1 is 45, multiply 1 x 4 x 5. If line 1 is 0, multiply 2 x 3 x 4 x 5			28080	64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{SW} = 43.64		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1		45	5.1
Date and Location:					
Sampling Protocol:					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
[4] Multiply [1] x [2] x [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a = 0			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	44.90	2015.92
Surface Water Route Score (S_{sw})	43.64	1904.45
Air Route Score (S_a)	0	
$S_{gw}^2 + S_{sw}^2 + S_a^2$		3920.37
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		62.61
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		36.19

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} = 0			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1		45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 (3)	1	3	3	8.2
3 Containment	0 (15)	1	15	15	8.3
4 Waste Characteristics Toxicity	0 1 2 (3)	5	3	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 (1) 2 3 4 5	4	4	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			4	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			540	21,600	
7 Divide line 6 by 21,600 and multiply by 100			S_{DC} = 2.50		

FIGURE 12
DIRECT CONTACT WORK SHEET

UNITED PARK CITY MINES COMPANY

Water Quality Analysis

Page 1 Date: 01/11/88 Listing of Samples By Sample Location

Sample Location	Sample Number	Sample Loc. Number	Sample Date	Cu (mg/l)	Cu-D (mg/l)	Hg (mg/l)	Mn (mg/l)	Pb (mg/l)	Pb-D (mg/l)	Zn (mg/l)	Zn-D (mg/l)	Cn (mg/l)	TDS (mg/l)	TSS (mg/l)	As (mg/l)	Record Number
Ag Cr Abv Pond	PCV 4	UPC 4	09/15/87			-.0005	.330	.100				-.004	730.00			1600
Ag Cr Abv Pond	PCV 4	UPC 4	08/03/87			-.0005	.033	.033				-.004	666.00			1645
Ag Cr Abv Pond	PCV 4	UPC 4	07/07/87			-.0005	.120	.020				-.004	628.00			1635
Ag Cr Abv Ponb	PCV 4	UPC 4	06/05/87				.160	.050				-.004	720.00			1618
Ag Cr Abv Pond	PCV 4	UPC 4	05/06/87					.120	.020	.790	.560			3.80		1512
Ag Cr Abv Pond	PCV 4	UPC 4	11/05/86			-.0005	.360	.050				-.004	1053.0			1261
Ag Cr Abv Pond	PCV 4	UPC 4	10/10/86			-.0005	.170	.050				.004	639.00			1244
Ag Cr Abv Pond	PCV 4	UPC 4	09/03/86			-.0005	.027	.050				-.004	642.00			925
Ag Cr Abv Pond	PCV 4	UPC 4	08/01/86			-.0005	.085	.033				-.004	615.00			910
Ag Cr Abv Pond	PCV 4	UPC 4	07/01/86			-.0005	.038	.020				.007	604.00			895
Ag Cr Abv Pond	PCV 4	UPC 4	06/05/86			-.0005	.100	.070				-.004	260.00			879
Ag Cr Abv Pond	PCV 4	UPC 4	05/01/86			-.0005	.180	.030				-.004	648.00			864
Ag Cr Abv Pond	PCV 4	UPC 4	04/07/86			-.0005	.270	.083				-.004	760.00			849
Ag Cr Abv Pond	PCV 4	UPC 4	11/04/85			-.0005	.330	.050				-.004	638.00			313
Ag Cr Abv Pond	PCV 4	UPC 4	10/03/85			.0005	.170	.120				-.004	583.00			334
Ag Cr Abv Pond	PCV 4	UPC 4	09/09/85			-.0005	.100	.050				-.004	729.00			349
Ag Cr Abv Pond	PCV 4	UPC 4	08/02/85			-.0005	.055	.033				-.004	558.00			364
Ag Cr Abv Pond	PCV 4	UPC 4	07/10/85			-.0005	.330	.050				-.004	648.00			379
Ag Cr Abv Pond	PCV 4	UPC 4	06/03/85			-.0005	.083	.050				-.004	498.00			395
Ag Cr Abv Pond	PCV 4	UPC 4	05/01/85			-.0005	.300	.180					661.00			415
Ag Cr Abv Pond	PCV 4	UPC 4	11/01/84			.0005	.083	.067				-.004	552.00			489
AG CR Abv Pond	PCV 4	UPC 4	10/03/84			-.0005	.100	.067				-.004	600.00			504
Ag Cr Abv Pond	PCV 4	UPC 4	09/06/84			2.0000	.400	.780				-.004	456.00			523
Ag Cr Abv Pond	PCV 4	UPC 4	08/10/84			-.0005	.700	.067				-.004	1015.0			539
Ag Cr Abv Pond	PCV 4	UPC 4	07/03/84			-.0005	.370	.100				-.004	684.00			566
Ag Cr Abv Pond	PCV 4	UPC 4	06/08/84			.9000	.130	.130				-.004	387.00			587
Ag Cr Abv Pond	PCV 4	UPC 4	11/01/83			-.0005	.100	.050				.054	613.00			658
Ag Cr Abv Pond	PCV 4	UPC 4	10/06/83			.0089	.670	1.300				-.008	586.00			672
Ag Cr Abv Pond	PCV 4	UPC 4	09/02/83			-.0005	.330	.033				-.004	830.00			697
Ag Cr Abv Pond	PCV 4	UPC 4	08/02/83			-.0005	.100	.050				.014	726.00			708
Ag Cr Abv Pond	PCV 4	UPC 4	07/06/83			-.0005	.280	.050				-.004	496.00			724
Ag Cr Abv Pond	PCV 4	UPC 4	06/08/83			.0046	.380	.900				.004	303.00			745
Ag Cr Abv Pond	PCV 4	UPC 4	01/31/83			-.0005	.380	.020				.009	720.00			815
Ag Cr Abv Pond	PCV 4	UPC 4	01/03/83			.0008	.330	.170				-.004	659.00			1131
Ag Cr Abv Pond	PCV 4	NOR 4	12/03/82			-.0005	.320	.070				-.004	809.00			1112
Ag Cr Abv Pond	PCV 4	NOR 4	11/01/82			-.0005	.170	.050				-.004	609.00			1109
Ag Cr Abv Pond	PCV 4	NOR 4	10/01/82			.0008	.380	.130				-.004	538.00			1089
Ag Cr Abv Pond	PCV 4	NOR 4	08/30/82			-.0005	.120	.030				.005	719.00			1081
Ag Cr Abv Pond	PCV 4	NOR 4	08/02/82			-.0005	.170	.030				-.004	723.00			1067
Ag Cr Abv Pond	PCV 4	NOR 4	07/01/82			-.0005	.170	.070				-.004	554.00			1050
Ag Cr Abv Pond	PCV 4	NOR 4	06/01/82			-.0005	.430	.920				.004	516.00			1018
Ag Cr Abv Pond	PCV 4	NOR 4	04/29/82			.0007	.280	.350				-.004	491.00			1013

EXHIBIT 15-F

UNITED PARK CITY MINES COMPANY

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Listing of Samples By Sample Location

Sample Location	Sample Number	Sample Loc. Number	Sample Date	Cu (mg/l)	Cu-D (mg/l)	Hg (mg/l)	Mn (mg/l)	Pb (mg/l)	Pb-D (mg/l)	Zn (mg/l)	Zn-D (mg/l)	Cn (mg/l)	TDS (mg/l)	TSS (mg/l)	As (mg/l)	Record Number
Pond Div Ditch	PCV 5	UPC 5	09/09/87			-.0005	3.100	.067				-.004	1867.0			1661
Pond Div Ditch	PCV 5	UPC 5	08/03/87			-.0005	1.300	.020				-.004	1704.0			1646
Pond Div Ditch	PCV 5	UPC 5	07/07/87			-.0005	1.600	.050				-.004	1511.0			1636
Pond Div Ditch	PCV 5	UPC 5	06/05/87				1.400	.067				-.004	1300.0			1619
Pond Div Ditch	PCV 5	UPC 5	05/06/87					-.017	-.017	1.200	.760			2.40		1513
Pond Div Ditch	PCV 5	UPC 5	11/05/86			-.0005	1.100	.033				-.004	1676.0			1262
Pond Div Ditch	PCV 5	UPC 5	10/10/86			-.0005	.780	.067				-.004	1538.0			1245
Pond Div Ditch	PCV 5	UPC 5	09/03/86			-.0005	1.800	.050				-.004	1671.0			926
Pond Div Ditch	PCV 5	UPC 5	08/10/86			-.0005	.750	.050				-.004	1882.0			940
Pond Div Ditch	PCV 5	UPC 5	08/01/86			-.0005	.045	.050				-.004	1731.0			911
Pond Div Ditch	PCV 5	UPC 5	07/01/86			-.0005	1.200	.020				-.004	1693.0			896
Pond Div Ditch	PCV 5	UPC 5	06/05/86			-.0005	.230	-.017				-.004	1542.0			880
Pond Div Ditch	PCV 5	UPC 5	05/01/86			-.0005	.840	.020				-.004	687.00			865
Pond Div Ditch	PCV 5	UPC 5	04/07/86			-.0005	.580	.033				-.004	566.00			850
Pond Div Ditch	PCV 5	UPC 5	11/04/85			-.0005	.700	.042				-.004	1277.0			414
Pond Div Ditch	PCV 5	UPC 5	10/03/85			-.0005	1.200	.067				-.004	1570.0			435
Pond Div Ditch	PCV 5	UPC 5	09/09/85			-.0005	.600	.067				-.004	1610.0			350
Pond Div Ditch	PCV 5	UPC 5	08/02/85			-.0005	1.400	.042				.004	1372.0			365
Pond Div Ditch	PCV 5	UPC 5	07/10/85			-.0005	1.600	.020				-.004	1520.0			380
Pond Div Ditch	PCV 5	UPC 5	06/03/85			-.0005	1.700	.050				-.004	1418.0			396
Pond Div Ditch	PCV 5	UPC 5	05/01/85			-.0005	2.000	.100				.014	870.00			416
Pond Div Ditch	PCV 5	UPC 5	11/01/84			-.0005	.950	.050				-.004	1166.0			490
Pond Div Ditch	PCV 5	UPC 5	10/03/84			-.0005	.100	.067				-.004	581.00			505
Pond Div Ditch	PCV 5	UPC 5	09/06/84			-.0005	.570	.067				-.004	1717.0			524
Pond Div Ditch	PCV 5	UPC 5	07/03/84			-.0005	.230	.053				.004	1533.0			567
Pond Div Ditch	PCV 5	UPC 5	06/08/84			-.0005	.480	.033				-.004	655.00			588
Pond Div Ditch	PCV 5	UPC 5	11/01/83			-.0005	.170	.050				.007	1419.0			659
Pond Div Ditch	PCV 5	UPC 5	10/06/83			-.0005	.170	.050				.016	1809.0			673
Pond Div Ditch	PCV 5	UPC 5	09/02/83			-.0005	.480	.050				-.004	1867.0			698
Pond Div Ditch	PCV 5	UPC 5	08/02/83			-.0005	.220	.050				.006	1762.0			709
Pond Div Ditch	PCV 5	UPC 5	07/06/83			-.0005	.530	.067				-.004	1604.0			723
Pond Div Ditch	PCV 5	UPC 5	06/08/83			-.0005	1.400	.050				-.004	1010.0			746
Pond Div Ditch	PCV 5	UPC 5	01/03/83			-.0005	3.200	.070				-.004	1343.0			1150
Pond Div Ditch	PCV 5	NOR 5	12/03/82			-.0005	.450	.050				.004	839.00			1113
Pond Div Ditch	PCV 5	NOR 5	11/01/82			-.0005	9.500	.030				-.004	1192.0			1110
Pond Div Ditch	PCV 5	NOR 5	10/01/82			-.0005	1.400	.050				-.004	881.00			1090
Pond Div Ditch	PCV 5	NOR 5	08/30/82			-.0005	6.000	.080				.007	1979.0			1082
Pond Div Ditch	PCV 5	NOR 5	08/02/82			-.0005	6.100	.070				.006	2016.0			1068
Pond Div Ditch	PCV 5	NOR 5	07/01/82			-.0005	3.000	.080				.019	1640.0			1051
Pond Div Ditch	PCV 5	NOR 5	06/01/82			-.0005	3.100	.080				.034	1517.0			1019
Pond Div Ditch	PCV 5	NOR 5	04/29/82			-.0005	.330	.080				-.004	638.00			1016

UNITED PARK CITY MINES COMPANY
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Sample Location	Sample Number	Sample Loc. Number	Sample Date	Cu (mg/l)	Cu-D (mg/l)	Hg (mg/l)	Mn (mg/l)	Pb (mg/l)	Pb-D (mg/l)	Zn (mg/l)	Zn-D (mg/l)	Cn (mg/l)	TDS (mg/l)	TSS (mg/l)	As (mg/l)	Record Number
Ag Cr BLo Pond	PCV 6	UPC 6	09/09/87			-.0005	.320	.130				-.004	723.00			1662
Ag Cr BLo Pond	PCV 6	UPC 6	08/03/87			-.0005	.110	.058				-.005	655.00			1647
Ag Cr BLo Pond	PCV 6	UPC 6	07/07/87			-.0005	.190	.120				-.004	915.00			1637
Ag Cr Blo Pond	PCV 6	UPC 6	06/05/87				.240	.120				-.004	750.00			1620
Ag Cr BLo Pond	PCV 6	UPC 6	05/06/87					.140	.025	.750	.370			3.70		1514
Ag Cr BLo Pond	PCV 6	UPC 6	11/05/86			-.0005	.300	.270				.005	886.00			1263
Ag Cr BLo Pond	PCV 6	UPC 6	10/10/86			-.0005	.230	.083				-.004	636.00			1246
Ag Cr BLo Pond	PCV 6	UPC 6	09/03/86			-.0005	.370	.050				-.004	629.00			927
Ag Cr BLo Pond	PCV 6	UPC 6	08/01/86			-.0005	.930	.050				-.004	656.00			914
Ag Cr BLo Pond	PCV 6	UPC 6	07/01/86			-.0005	.057	.020				-.004	569.00			897
Ag Cr BLo Pond	PCV 6	UPC 6	06/05/86			-.0005	.110	.040				-.004	265.00			881
Ag Cr BLo Pond	PCV 6	UPC 6	05/01/86			-.0005	.073	-.020				-.004	590.00			866
Ag Cr BLo Pond	PCV 6	UPC 6	04/07/86			-.0050	.330	.017				-.004	772.00			851
Ag Cr Blo Pond	PCV 6	UPC 6	11/04/85			-.0005	.350	.050				-.004	664.00			315
Ag Cr BLo Pond	PCV 6	UPC 6	10/03/85			-.0005	.150	.050				-.004	603.00			336
Ag Cr BLo Pond	PCV 6	UPC 6	09/09/85			-.0005	.180	.067				-.004	709.00			351
Ag Cr BLo Pond	PCV 6	UPC 6	08/02/85			-.0005	.230	.033				-.004	648.00			366
Ag Cr BLo Pond	PCV 6	UPC 6	07/10/85			-.0005	.420	.030				-.004	782.00			381
Ag Cr BLo Pond	PCV 6	UPC 6	06/03/85			-.0005	.083	.050				-.004	470.00			397
Ag Cr BLo Pond	PCV 6	UPC 6	05/01/85			-.0005	.210	.083				-.004	652.00			417
Ag Cr BLo Pond	PCV 6	UPC 6	11/01/84			-.0005	.100	.067				-.004	589.00			491
Ag Cr BLo Pond	PCV 6	UPC 6	10/03/84			-.0005	.500	.050				-.004	1524.0			506
Ag Cr BLo Pond	PCV 6	UPC 6	09/06/84			2.1000	.350	.620				-.004	481.00			525
Ag Cr BLo Pond	PCV 6	UPC 6	08/10/84			-.0005	.830	.067				-.004	1122.0			541
Ag Cr BLo Pond	PCV 6	UPC 6	07/03/84			-.0005	.720	.100				-.004	684.00			568
Ag Cr BLo Pond	PCV 6	UPC 6	06/08/84			-.0005	.120	.120				-.004	403.00			589
Ag Cr BLo Pond	PCV 6	UPC 6	11/01/83			-.0005	.080	.070				-.004	595.00			660
Ag Cr BLo Pond	PCV 6	UPC 6	10/06/83			.0084	.680	1.500				-.008	580.00			674
Ag Cr BLo Pond	PCV 6	UPC 6	09/02/83			-.0005	.420	.170				.007	801.00			699
Ag Cr BLo Pond	PCV 6	UPC 6	08/02/83			-.0005	.170	.050				.005	689.00			710
Ag Cr BLo Pond	PCV 6	UPC 6	07/06/83			-.0005	.300	.050				-.004	476.00			725
Ag Cr BLo Pond	PCV 6	UPC 6	06/08/83			.0033	.320	.580				-.004	295.00			747
Ag Cr BLo Pond	PCV 6	NOR 6	11/01/82			-.0005	.220	.050				-.004	598.00			1111
Ag Cr BLo Pond	PCV 6	NOR 6	10/01/82			-.0005	.380	.100				-.004	552.00			1091
Ag Cr Blo Pond	PCV 6	NOR 6	08/30/82			-.0005	.200	.030				-.004	1506.0			1083
Ag Cr BLo Pond	PCV 6	NOR 6	08/02/82			-.0005	.320	.050				-.004	708.00			1069
Ag Cr BLo Pond	PCV 6	NOR 6	07/01/82			-.0005	.270	.080				-.004	596.00			1052
Ag Cr BLo Pond	PCV 6	NOR 6	06/01/82			.0022	.480	1.000				-.004	330.00			1020
Ag Cr BLo Pond	PCV 6	NOR 6	04/29/82			-.0005	.250	.180				-.004	329.00			1017

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Sample Location	Sample Number	Sample Loc. Number	Sample Date	Cu (mg/l)	Cu-D (mg/l)	Hg (mg/l)	Mn (mg/l)	Pb (mg/l)	Pb-D (mg/l)	Zn (mg/l)	Zn-D (mg/l)	Cn (mg/l)	TDS (mg/l)	TSS (mg/l)	As (mg/l)	Record Number
PCV Mon Well	DH 1	MW 1	09/09/87			-.0005	.067	.067				-.004	841.00			1663
PCV Mon Well	DH 1	MW 1	08/03/87			-.0005	.110	.035				-.004	919.00			1648
PCV Mon Well	DH 1	MW 1	07/07/87			-.0005	.052	.033				-.004	843.00			1630
PCV Mon Well	DH 1	MW 1	06/05/87				.470	.083				.006	1100.0			1621
PCV Mon Well	DH 1	MW 1	05/06/87			-.0005	.250	.080				-.004	1041.0			1507
PCV Mon Well	DH 1	MW 1	12/02/86			-.0005	.270	.083				-.004	1143.0			1541
PCV Mon Well	DH 1	MW 1	11/05/86			-.0005	.140	.033				-.004	1433.0			1264
PCV Mon Well	DH 1	MW 1	10/10/86			-.0005	.050	.050				.008	1163.0			1247
PCV Mon Well	DH 1	MW 1	09/03/86			-.0005	.017	.050				-.004	1216.0			1228
PCV Mon Well	DH 1	MW 1	08/01/86			-.0005	.092	.040				-.004	1182.0			913
PCV Mon Well	DH 1	MW 1	07/01/86			-.0005	.160	.050				.013	1169.0			898
PCV Mon Well	DH 1	MW 1	06/05/86			-.0005	.110	.017				-.004	1471.0			882
PCV Mon Well	DH 1	MW 1	05/01/86			-.0005	.073	.030				-.004	1193.0			867
PCV Mon Well	DH 1	MW 1	04/07/86			-.0005	.180	.025				-.004	1262.0			852
PCV Mon Well	DH 1	MW 1	11/04/85			-.0005	.050	.042				.004	1208.0			316
PCV Mon Well	DH 1	MW 1	10/03/85			-.0005	.130	.067				.004	1223.0			337
PCV Mon Well	DH 1	MW 1	09/09/85			-.0005	.170	.050				.004	1243.0			352
PCV Mon Well	DH 1	MW 1	08/02/85			-.0005	.960	.042				.006	1187.0			367
PCV Mon Well	DH 1	MW 1	07/10/85			-.0005	.450	-.020				.008	1189.0			383
PCV Mon Well	DH 1	MW 1	06/03/85			-.0005	.570	.067				.012	1210.0			398
PCV Mon Well	DH 1	MW 1	05/01/85			-.0005	.170	.067				-.004	1201.0			418
PCV Mon Well	DH 1	MW 1	11/01/84			-.0005	.083	.050				.280	1412.0			492
PCV Mon Well	DH 1	MW 1	10/03/84			-.0005	.300	.033				.008	1349.0			507
PCV Mon Well	DH 1	MW 1	09/06/84			-.0005	.250	.067				.010	1344.0			526
PCV Mon Well	DH 1	MW 1	08/10/84			-.0005	.350	.067				.007	1431.0			542
PCV Mon Well	DH 1	MW 1	07/03/84			-.0005	.320	.050				.007	1297.0			569
PCV Mon Well	DH 1	MW 1	06/08/84			-.0005	.100	.067				.006	1334.0			590
PCV Mon Well	DH 1	MW 1	11/01/83			-.0005	.350	.050				.067	1322.0			661
PCV Mon Well	DH 1	MW 1	10/06/83			-.0005	.370	.050				.025	1471.0			675
PCV Mon Well	DH 1	MW 1	09/02/83			-.0005	.420	.083				.016	1516.0			700
PCV Mon Well	DH 1	MW 1	08/02/83			-.0005	.900	.083				.036	1359.0			711
PCV Mon Well	DH 1	MW 1	07/06/83			-.0005	.530	.050				.017	1344.0			727
PCV Mon Well	DH 1	MW 1	06/08/83			-.0005	.880	.067				.024	1281.0			740
PCV Mon Well	DH 1	MW 1	11/01/82			-.0005	.400	.050				.035	1274.0			1097
PCV Mon Well	DH 1	MW 1	10/01/82			-.0005	.270	.070				.030	1216.0			1072
PCV Mon Well	DH 1	MW 1	08/30/82			-.0005	.530	.070				.032	1435.0			1026
PCV Mon Well	DH 1	MW 1	08/02/82			-.0005	.520	.030				.032	1429.0			1063
PCV Mon Well	DH 1	MW 1	07/01/82			-.0005	.680	.070				.021	1310.0			1045
PCV Mon Well	DH 1	MW 1	06/01/82			-.0005	.570	.080				.027	1268.0			1032
PCV Mon Well	DH 1	MW 1	04/29/82			-.0005	.570	.070				.027	1238.0			1029

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Sample Location	Sample Number	Sample Loc. Number	Sample Date	Cu (mg/l)	Cu-D (mg/l)	Hg (mg/l)	Mn (mg/l)	Pb (mg/l)	Pb-D (mg/l)	Zn (mg/l)	Zn-D (mg/l)	Cn (mg/l)	TDS (mg/l)	TSS (mg/l)	As (mg/l)	Record Number
PCV Mon Well	DH 3	MW 3	09/09/87			-.0005	6.200	.050				-.004	1639.0			1664
PCV Mon Well	DH 3	MW 3	08/03/87			-.0005	4.800	.020				-.004	1490.0			1649
PCV Mon Well	DH 3	MW 3	07/07/87			-.0005	5.400	.083				-.004	1374.0			1631
PCV Mon Well	DH 3	MW 3	06/05/87				5.000	.100				.005	1500.0			1622
PCV Mon Well	DH 3	MW 3	05/06/87			-.0005	4.200	.053				.005	1458.0			1508
PCV Mon Well	DH 3	MW 3	12/02/86			-.0005	4.500	.067				-.004	1672.0			1542
PCV Mon Well	DH 3	MW 3	11/05/86			-.0005	2.900	.033				-.004	2046.0			1265
PCV Mon Well	DH 3	MW 3	10/10/86			-.0005	1.700	.067				-.004	1755.0			1248
PCV Mon Well	DH 3	MW 3	09/03/86			-.0005	4.000	.033				-.004	1539.0			929
PCV Mon Well	DH 3	MW 3	08/01/86			-.0005	2.500	.050				.007	1516.0			914
PCV Mon Well	DH 3	MW 3	07/01/86			-.0005	.950	.033				.004	1438.0			899
PCV Mon Well	DH 3	MW 3	06/05/86			-.0005	2.800	.030				.006	1338.0			883
PCV Mon Well	DH 3	MW 3	05/01/86			-.0005	.950	.020				-.004	1174.0			868
PCV Mon Well	DH 3	MW 3	04/07/86			-.0005	3.700	.017				-.004	1166.0			854
PCV Mon Well	DH 3	MW 3	11/04/85			-.0005	2.100	.050				-.004	1551.0			317
PCV Mon Well	DH 3	MW 3	10/03/85			-.0005	3.200	.067				.004	1484.0			338
PCV Mon Well	DH 3	MW 3	09/09/85			-.0005	3.600	.050				.005	1475.0			353
PCV Mon Well	DH 3	MW 3	08/02/85			-.0005	.630	.050				-.004	1342.0			368
PCV Mon Well	DH 3	MW 3	07/10/85			-.0005	1.900	-.020				.006	1339.0			384
PCV Mon Well	DH 3	MW 3	06/03/85			-.0005	3.300	.067				.006	1173.0			399
PCV Mon Well	DH 3	MW 3	05/01/85			-.0005	2.100	.050				-.004	1109.0			419
PCV Mon Well	DH 3	MW 3	11/01/84			-.0005	3.800	.050				.005	1524.0			493
PCV Mon Well	DH 3	MW 3	10/03/84			-.0005	3.400	.067				.004	1676.0			508
PCV Mon Well	DH 3	MW 3	09/06/84			-.0005	.420	.050				-.004	1576.0			527
PCV Mon Well	DH 3	MW 3	08/10/84			-.0005	1.800	.083				-.004	1722.0			543
PCV Mon Well	DH 3	MW 3	07/03/84			-.0005	.870	.067				-.004	1401.0			570
PCV Mon Well	DH 3	MW 3	06/08/84			-.0005	2.600	.067				.004	1189.0			591
PCV Mon Well	DH 3	MW 3	11/01/83			-.0005	4.200	.070				.025	1879.0			662
PCV Mon Well	DH 3	MW 3	10/06/83			.0086	3.800	.067				.022	2168.0			676
PCV Mon Well	DH 3	MW 3	09/02/83			-.0005	3.400	.050				.006	2164.0			701
PCV Mon Well	DH 3	MW 3	08/02/83			-.0005	1.500	.050				.020	1662.0			712
PCV Mon Well	DH 3	MW 3	07/06/83			-.0005	1.200	.067				.010	1540.0			725
PCV Mon Well	DH 3	MW 3	06/08/83			-.0005	3.800	.120				.016	1625.0			741
PCV Mon Well	DH 3	MW 3	01/03/83			-.0005	6.600	.120				.008	1871.0			1132
PCV Mon Well	DH 3	MW 3	12/03/82			-.0005	5.700	.100				.004	2335.0			1114
PCV Mon Well	DH 3	MW 3	11/01/82			-.0005	.900	.050				.004	2148.0			1098
PCV Mon Well	DH 3	MW 3	10/01/82			-.0005	4.400	.050				-.004	1928.0			1093
PCV Mon Well	DH 3	MW 3	08/30/82			-.0005	3.300	.070				.009	2056.0			1077
PCV Mon Well	DH 3	MW 3	08/02/82			-.0005	2.600	.050				.016	1876.0			1064
Pcv Mon Well	DH 3	MW 3	07/01/82			-.0005	2.800	.080				-.004	1630.0			1046
PCV Mon Well	DH 3	MW 3	06/01/82			-.0005	3.000	.080				.013	1492.0			1033
PCV Mon Well	DH 3	MW 3	04/29/82			-.0005	2.600	.080				.010	1265.0			1010

UNITED PARK CITY MINES COMPANY

Water Quality Analysis

Page 1 Date: 01/11/88 Listing of Samples By Sample Location

Sample Location	Sample Number	Sample Loc. Number	Sample Date	Cu (mg/l)	Cu-D (mg/l)	Hg (mg/l)	Mn (mg/l)	Pb (mg/l)	Pb-D (mg/l)	Zn (mg/l)	Zn-D (mg/l)	Cn (mg/l)	TDS (mg/l)	TSS (mg/l)	As (mg/l)	Record Number
PCV Mon Well	DH 4	MW 4	09/09/87			-.0005	9.800	.067				.280	2583.0			1665
PCV Mon Well	DH 4	MW 4	08/03/87			-.0005	11.000	.035				.400	2593.0			1630
PCV Mon Well	DH 4	MW 4	07/07/87			-.0005	12.000	-.050				.110	2556.0			1602
PCV Mon Well	DH 4	MW 4	06/05/87				11.000	.083				.960	2700.0			1623
PCV Mon Well	DH 4	MW 4	05/06/87			-.0005	6.200	-.017				.780	1902.0			1509
PCV Mon Well	DH 4	MW 4	12/02/86			-.0005	.230	.050				.004	689.00			1543
PCV Mon Well	DH 4	MW 4	11/05/86			-.0005	11.000	.067				1.100	2913.0			1266
PCV Mon Well	DH 4	MW 4	10/10/86			-.0005	9.400	.083				.900	2531.0			1249
PCV Mon Well	DH 4	MW 4	09/03/86			-.0005	7.500	.067				.770	2553.0			930
PCV Mon Well	DH 4	MW 4	08/01/86			-.0005	8.400	.067				.900	2563.0			915
PCV Mon Well	DH 4	MW 4	07/01/86			-.0005	9.400	.170				.960	1609.0			900
PCV Mon Well	DH 4	MW 4	06/05/86			-.0005	11.000	-.017				1.000	2957.0			884
PCV Mon Well	DH 4	MW 4	05/01/86			-.0005	12.000	.050				.120	2482.0			869
PCV Mon Well	DH 4	MW 4	04/07/86			-.0005	9.300	.067				1.200	2532.0			854
PCV Mon Well	DH 4	MW 4	11/04/85			-.0005	12.000	.067				1.600	2651.0			318
PCV Mon Well	DH 4	MW 4	10/03/85			-.0005	12.000	.130				1.200	2659.0			339
PCV Mon Well	DH 4	MW 4	09/09/85			-.0005	7.500	.067				.910	2662.0			354
PCV Mon Well	DH 4	MW 4	08/02/85			-.0005	10.000	.067				2.200	2583.0			369
PCV Mon Well	DH 4	MW 4	07/10/85			-.0005	7.500	-.020				2.900	2518.0			385
PCV Mon Well	DH 4	MW 4	06/03/85			.0007	8.600	.100				2.300	2194.0			400
PCV Mon Well	DH 4	MW 4	11/01/84			-.0005	9.700	.067				.006	2569.0			494
PCV Mon Well	DH 4	MW 4	10/03/84			-.0005	11.000	.067				2.100	2693.0			509
PCV Mon Well	DH 4	MW 4	09/06/84			-.0005	8.000	.100				1.400	2648.0			528
PCV Mon Well	DH 4	MW 4	08/10/84			-.0005	10.000	.099				1.500	2713.0			544
PCV Mon Well	DH 4	MW 4	07/03/84			-.0005	8.800	.100				1.400	2660.0			571
PCV Mon Well	DH 4	MW 4	06/08/84			-.0005	8.000	.100				.730	2183.0			592
PCV Mon Well	DH 4	MW 4	11/01/83			-.0005	9.200	.180				4.700	2667.0			663
PCV Mon Well	DH 4	MW 4	10/06/83			-.0005	8.300	.200				1.600	2666.0			677
PCV Mon Well	DH 4	MW 4	09/02/83			-.0005	10.000	.400				2.100	2525.0			702
PCV Mon Well	DH 4	MW 4	08/02/83			-.0005	9.800	.120				8.400	2685.0			713
PCV Mon Well	DH 4	MW 4	07/06/83			.0005	5.900	.067				1.600	2120.0			726
PCV Mon Well	DH 4	MW 4	06/08/83			-.0005	4.500	.130				1.700	1893.0			742
PCV Mon Well	DH 4	MW 4	11/01/82			-.0005	3.200	.180				1.200	2908.0			1099
PCV Mon Well	DH 4	MW 4	10/01/82			-.0005	6.100	.100				2.500	2232.0			1094
PCV Mon Well	DH 4	MW 4	08/30/82			-.0005	7.700	.070				3.700	2800.0			1078
PCV Mon Well	DH 4	MW 4	08/02/82			-.0005	8.300	.070				2.500	2879.0			1065
PCV Mon Well	DH 4	MW 4	07/01/82			-.0005	3.300	.120				2.200	2230.0			1047
PCV Mon Well	DH 4	MW 4	06/01/82			-.0005	2.000	.120				.056	1019.0			1034

UNITED PARK CITY MINES COMPANY

Water Quality Analysis

Page 1 Date: 01/11/88 Listing of Samples By Sample Location

Sample Location	Sample Number	Sample Loc. Number	Sample Date	Cu (mg/l)	Cu-D (mg/l)	Hg (mg/l)	Mn (mg/l)	Pb (mg/l)	Pb-D (mg/l)	Zn (mg/l)	Zn-D (mg/l)	Cn (mg/l)	TDS (mg/l)	TSS (mg/l)	As (mg/l)	Record Number
PCV Mon Well	DH 5	MW 5	09/09/87			-.0005	14.000	.150				-.004	2435.0			1660
PCV Mon Well	DH 5	MW 5	08/03/87			-.0005	15.000	.033				-.004	2460.0			1651
PCV Mon Well	DH 5	MW 5	07/07/87			-.0005	16.000	.067				-.004	2318.0			1633
PCV Mon Well	DH 5	MW 5	06/05/87				16.000	.120				.006	2400.0			1624
PCV Mon Well	DH 5	MW 5	05/06/87			-.0005	14.000	.120				.005	2509.0			1510
PCV Mon Well	DH 5	MW 5	12/02/86			-.0005	1.600	.067				.004	1282.0			1544
PCV Mon Well	DH 5	MW 5	11/05/86			-.0005	13.000	.083				-.004	3102.0			1267
PCV Mon Well	DH 5	MW 5	10/10/86			-.0005	12.000	.083				.005	2464.0			1250
PCV Mon Well	DH 5	MW 5	09/03/86			-.0005	12.000	.067				.006	2498.0			931
PCV Mon Well	DH 5	MW 5	08/01/86			-.0005	14.000	.067				.005	2437.0			916
PCV Mon Well	DH 5	MW 5	07/01/86			-.0005	15.000	.067				.004	2465.0			901
PCV Mon Well	DH 5	MW 5	06/05/86			-.0005	15.000	-.017				.005	2407.0			885
PCV Mon Well	DH 5	MW 5	05/01/86			-.0005	14.000	.050				-.004	2188.0			870
PCV Mon Well	DH 5	MW 5	04/07/86			-.0005	10.000	.050				-.004	2220.0			855
PCV Mon Well	DH 5	MW 5	11/04/85			-.0005	11.000	.067				.006	2635.0			315
PCV Mon Well	DH 5	MW 5	10/03/85			-.0005	13.000	.067				.005	2667.0			340
PCV Mon Well	DH 5	MW 5	09/09/85			-.0005	9.200	.067				.008	2401.0			355
PCV MON Well	DH 5	MW 5	08/02/85			-.0005	15.000	.083				.011	2436.0			370
PCV Mon Well	DH 5	MW 5	07/10/85			-.0005	11.000	-.020				.014	2333.0			386
PCV Mon Well	DH 5	MW 5	06/03/85			-.0005	14.000	.100				.007	2546.0			401
PCV Mon Well	DH 5	MW 5	05/01/85			-.0005	8.000	.067				-.004	2349.0			420
PCV Mon Well	DH 5	MW 5	11/01/84			.0005	12.000	.130				.350	2697.0			495
PCV Mon Well	DH 5	MW 5	10/03/84			-.0005	16.000	.100				.008	2840.0			510
PCV Mon Well	DH 5	MW 5	09/06/84			-.0005	13.000	.100				-.004	3039.0			529
PCV Mon Well	DH 5	MW 5	08/10/84			.0005	13.000	.230				-.004	2746.0			545
PCV Mon Well	DH 5	MW 5	07/03/84			-.0005	12.000	.100				.005	2781.0			572
PCV Mon Well	DH 5	MW 5	06/08/84			.0005	9.300	.100				.005	2324.0			593
PCV Mon Well	DH 5	MW 5	11/01/83			-.0005	12.000	.100				.024	2836.0			664
PCV Mon Well	DH 5	MW 5	10/06/83			-.0005	8.300	.120				.030	2506.0			678
PCV Mon Well	DH 5	MW 5	09/02/83			-.0005	10.000	.430				-.004	2261.0			703
PCV Mon Well	DH 5	MW 5	08/02/83			-.0005	9.200	.170				.200	3844.0			714
PCV Mon Well	DH 5	MW 5	07/06/83			-.0005	3.200	.033				.010	684.00			729
PCV Mon Well	DH 5	MW 5	06/08/83			-.0005	.270	.050				-.004	73.00			743
PCV Mon Well	DH 5	MW 5	12/03/82			-.0005	2.000	.050				-.004	1450.0			1115
PCV Mon Well	DH 5	MW 5	11/01/82			-.0005	9.300	.170				.006	3032.0			1100
PCV Mon Well	DH 5	MW 5	10/01/82			-.0005	7.800	.200				-.000	2315.0			1095
PCV Mon Well	DH 5	MW 5	08/30/82			-.0005	10.000	.220				.010	1197.0			1079
PCV Mon Well	DH 5	MW 5	08/02/82			-.0005	8.300	.150				.006	2101.0			1060
PCV Mon Well	DH 5	MW 5	07/01/82			-.0005	.740	.130				-.004	883.00			1048
PCV Mon Well	DH 5	MW 5	06/01/82			-.0005	.270	.120				-.004	96.00			1035

UNITED PARK CITY MINES COMPANY

Water Quality Analysis

Page 1 Date: 01/11/88 Listing of Samples By Sample Location

Sample Location	Sample Number	Sample Loc. Number	Sample Date	Cu (mg/l)	Cu-D (mg/l)	Hg (mg/l)	Mn (mg/l)	Pb (mg/l)	Pb-D (mg/l)	Zn (mg/l)	Zn-D (mg/l)	Cn (mg/l)	TDS (mg/l)	TSS (mg/l)	As (mg/l)	Record Number
PCV Mon Well	DH 6	MW 6	09/09/87			-.0005	1.900	.033					974.00			1667
PCV Mon Well	DH 6	MW 6	08/03/87			-.0005	1.300	.020					1226.0			1652
PCV Mon Well	DH 6	MW 6	07/07/87			-.0005	1.700	.033				.032	1135.0			1644
PCV Mon Well	DH 6	MW 6	06/05/87				2.000	.050					2460.0			1625
PCV Mon Well	DH 6	MW 6	05/06/87			-.0005	2.500	-.017				.180	1130.0			1511
PCV Mon Well	DH 6	MW 6	12/02/86			-.0005	.130	.120				-.004	680.00			1545
PCV Mon Well	DH 6	MW 6	11/05/86			-.0005	1.800	.067				.088	1588.0			1268
PCV Mon Well	DH 6	MW 6	10/10/86			-.0005	1.900	.083				.180	1354.0			1251
PCV Mon Well	DH 6	MW 6	09/03/86			-.0005	1.700	.067				.088	1402.0			932
PCV Mon Well	DH 6	MW 6	08/01/86			-.0005	2.000	.083				.330	1399.0			917
PCV Mon Well	DH 6	MW 6	07/01/86			-.0005	2.500	.067				.200	1489.0			902
PCV Mon Well	DH 6	MW 6	06/05/86			-.0005	2.800	.023				.190	1463.0			886
PCV Mon Well	DH 6	MW 6	05/01/86			-.0005	2.700	.020				.006	1526.0			871
PCV Mon Well	DH 6	MW 6	04/07/86			-.0005	2.800	.033				.190	1212.0			856
PCV Mon Well	DH 6	MW 6	11/04/85			-.0005	2.400	.050				.250	1298.0			320
PCV Mon Well	DH 6	MW 6	10/03/85			-.0005	2.400	.033				.086	1319.0			341
PCV Mon Well	DH 6	MW 6	09/09/85			-.0005	2.400	.033				.290	1314.0			356
PCV Mon Well	DH 6	MW 6	08/02/85			-.0005	2.900	.047				.980	1310.0			371
PCV Mon Well	DH 6	MW 6	07/10/85			-.0005	3.700	-.020				.920	1304.0			387
PCV Mon Well	DH 6	MW 6	06/03/85			.0005	4.000	.100				.019	1458.0			402
PCV Mon Well	DH 6	MW 6	05/01/85			-.0005	4.200	.050				.920	1291.0			421
PCV Mon Well	DH 6	MW 6	11/01/84			-.0005	3.100	.050				.008	1446.0			496
PCV Mon Well	DH 6	MW 6	10/03/84			-.0005	3.200	.067				.550	1417.0			511
PCV Mon Well	DH 6	MW 6	09/06/84			-.0005	3.500	.130				.310	1520.0			530
PCV Mon Well	DH 6	MW 6	08/10/84			.0005	4.000	.130				.530	1510.0			546
PCV Mon Well	DH 6	MW 6	07/03/84			-.0005	3.800	.067				.260	1597.0			573
PCV Mon Well	DH 6	MW 6	06/08/84			-.0005	2.800	.067				.220	1030.0			594
PCV Mon Well	DH 6	MW 6	11/01/83			-.0005	3.200	.070				.018	1422.0			665
PCV Mon Well	DH 6	MW 6	10/06/83			-.0005	2.700	.050				.510	1288.0			679
PCV Mon Well	DH 6	MW 6	09/02/83			-.0005	2.900	.130				.520	1322.0			704
PCV Mon Well	DH 6	MW 6	08/02/83			-.0005	3.700	.083				4.600	2201.0			715
PCV Mon Well	DH 6	MW 6	07/06/83			-.0005	3.700	.050				.080	1260.0			730
PCV Mon Well	DH 6	MW 6	06/08/83			-.0005	1.700	.050				.032	644.00			744
PCV Mon Well	DH 6	MW 6	11/01/82			-.0005	2.500	.030				.740	1433.0			1101
PCV Mon Well	DH 6	MW 6	10/01/82			-.0005	1.700	.080				.026	936.00			1096
PCV Mon Well	DH 6	MW 6	08/30/82			-.0005	3.700	.150				.060	3973.0			1080
PCV Mon Well	DH 6	MW 6	07/01/82			-.0005	3.000	.120				.054	1141.0			1049
PCV Mon Well	DH 6	MW 6	06/01/82			-.0005	2.100	.270				-.004	973.00			1036
PCV Mon Well	DH 6	MW 6	04/29/82			-.0005	1.100	.280				.010	1725.0			1031

EXHIBIT 15-G

Telephone 363-3302

Hand Sample Serial 3558

Mine United Park City Mines Co
309 Kearns Bldg
S.L.C. UT

RESULTS PER TON OF 2000 POUNDS

Sept 8, 1987

ASSAY REPORT

UNION ASSAY OFFICE, Inc.
BRYANT L. LARSEN, President
JAMES G. STRATTON, Vice President
A. S. JOLLIFFE, Treasurer
MARK RAGSDALE, Secretary
P. O. Box 1528
Salt Lake City, Utah 84110
(801) 363-3302

NUMBER	GOLD Ozs. per Ton	SILVER Ozs. Per Ton	LEAD Per Cent	COPPER Per Cent	INSOL. Per Cent	ZINC Per Cent	SULPHUR Per Cent	~~XXXXXXXX~~ Per Cent	~~XXXXXXXX~~ Per Cent	Per Cent	Per Cent
								CaCO3	Si	Al	
R Flot Tails	0.020	3.4	2.4			2.20		14.90	22.14	4.19	

Remarks P.O. SL-444

Charges $ 73.00

EXHIBIT 15-H

May 2, 1973

BUREAU OF ENVIRONMENTAL HEALTH
DIVISION OF HEALTH

MEMORANDUM

TO: File

FROM: Dennis Downs & Joel Smith

SUBJECT: Park City Solid Waste Disposal Site Inspection

On 5 April 1973, we met in Park City, Summit County with officials to inspect proposed new solid waste disposal site. New site was inspected and was found to have adequate soil for working and covering refuse. The area was so located that surface drainage would not be a problem. Trenches were dug to a depth of about 20 ft. and no ground water was observed. The site appeared to be very adequate for use as a solid waste disposal facility. Operation of a sanitary landfill was discussed with city officials.

Closing of the old dump was also discussed.

Those in attendance were:

Joel C. Smith, State Division of Health
Dennis R. Downs, State Division of Health
Keith Baily, Park City Manager
Clem Hansen, Park City Councilman
Jan Wilking, Greater Park City Corporation

EXHIBIT 15-I

Park City Municipal Corporation

PARK CITY, UTAH

WILLIAM P. SULLIVAN, Mayor

April 10, 1973

Dennis Downs
Department of Health
and Sanitation
State of Utah

Dear Mr. Downs:

It was a pleasure meeting with you on April 5, 1973, concerning our 20 acre Sanitary Landfill Site. We believe that the proposed site should prove to be most successful for the Park City area. We, therefore, would like to make preparations to have this site dedicated as our Sanitary Landfill.

Enclosed you will find the following information that should put us well on our way to achieving the above goal:

(1). Geological reconnaissance of the proposed Park City / Summit County Sanitary Landfill Site.
(2). Map showing location, boundries, description and size of proposed landfill.
(3). Site Lease Agreement, with legal description.

The Park City Municipal Corporation and its City Manager will administer the Sanitary Landfill operation. The City Manager will be administrating officer and will see that proper management of the site is evident. We have yet to determine who will actually operate the landfill, but, whether we do it ourselves or contract the operation, our plans are for an exemplary Sanitary Landfill operation. The Park City Municipal Corporation will maintain jurisdiction regardless.

The City owns a D-6 caterpillar dozer and this can be housed on the site. A fence six feet high will be placed around a 2½ acre piece and moved as required.

There are approxiamately 1700 people living in the city of Park City. The adjacent areas of Park West, Synderville, and Summit Park would add an additional 600 people. We would

Park City Municipal Corporation

PARK CITY, UTAH

WILLIAM P. SULLIVAN, Mayor

April 10, 1973

project that by 1980, there could be 10,00 people using the Sanitary Landfill with no increase over 10,00 people. In any event, our 20 acre site will be adequate for at least a 20 year period.

With a water table at about 30 feet below the surface, there should be no problem with subwater. All surface water will be directed around the Landfill Site. This will be a very minor problem.

It is our plan to abandon the old garbage site to Greater Park City Corporation. It is in our contract with Greater Park City Corporation that the city poison the dump and to supervise the covering process. We, the City, would like to involve the State Board of Health in the abandoning process.

The Park City Municipal Corporation would like to do everything possible to dedicate this site as their new Sanitary Landfill. We hope we have made the initial steps in this process. Please let me know how we stand and what we must do in the future to bring the dedication of this site about. We want it in use this Spring or early Summer.

Thank You!

Sincerely,

Keith R. Bailey

Keith R. Bailey
City Manager

KRB/lm
Enclosure

EXHIBIT 15-J

REPORT OF INVESTIGATION NO. 69

UTAH GEOLOGICAL & MINERALOGICAL SURVEY

GEOLOGICAL RECONNAISSANCE OF THE PROPOSED PARK CITY/SUMMIT COUNTY SANITARY LANDFILL SITE

By

Bruce N. Kaliser, Engineering Geologist
Utah Geological and Mineralogical Survey

SEPTEMBER 27, 1972

GEOLOGICAL REPORT ON THE

PARK CITY/SUMMIT COUNTY SANITARY LANDFILL SITE

The writer inspected the proposed site for a new sanitary landfill operation on Richardson Flat in Section 2, T.2S., R.4E., with Park City and Summit County officials on September 25, 1972. Twenty acres are available at the site for a sanitary landfill. The operation is to replace an open burning dump which has been in operation for decades at the foot of Masonic Hill, about 2-1/2 miles southwest of the newly proposed site.

The site is on an alluvial flat with the alluvial thickness probably increasing towards the north end. The writer can find no record of probings of the alluvium at the site so there is no knowledge of its thickness. To the west of the site there are records for two water wells. The data for these wells as extracted from the State Division of Water Rights' files is to be found in the Appendix to this report. Unfortunately the wells are too far removed from the site to provide data on geologic materials and the water table beneath the site. The wells tap groundwater from depths in excess of one hundred feet from fractured bedrock (andesite). It is likely that a water table shallower than this depth exists beneath the site.

Borings will be necessary to satisfactorily explore the site. Four borings are suggested to depths of 50 to 75 feet. One boring each should be located at the northeast and southwest extremities of the property and the other two about 665 feet southwest and northeast from the first two, respectively. The borings must be geologically logged and any water encountered must be noted. Water levels in the holes should be monitored for several days following completion of the borings.

If saturated alluvium is encountered, a minimum of one hole should be set with perforated casing to monitor future water level fluctuation and to extract groundwater samples in the future. The hole should be pumped for a sample soon after its completion. Bacteriological and chemical analyses (complete) should be run for each water sample taken. Following the acquisition of this data an evaluation of the site can be made that can be presented to the State Division of Environmental Health.

Surface drainage in the site vicinity appears to be quite satisfactory. This will be especially true if the drainage barrier is re-established immediately to the south of the site so that flood runoffs will be diverted to flow in already existent drainage paths to the east.

The two backhoe-constructed testpits that were examined do not go sufficiently deep to determine the nature of the material to be removed. The top six or seven feet is a cobbly, gravelly silt. The deeper test hole exposed a clayey silt layer beneath the bed. The borings, supplemented with additional testpits should provide considerably more data on the fill material from which workability and handling judgements can be made. No serious problems are envisioned but cobbles may interfere in providing a thin daily cover and the silt will enable relatively deep frost penetration.

Upon taking the steps recommended herein a proper hydrogeological evaluation of the site can be made.

Submitted by:

Bruce N. Kaliser

Bruce N. Kaliser
Engineering Geologist

APPENDIX

Well No. 34833 (D-2-4) 2 cbd

Owner: Ray Wortley - new

Location: 1144' S., 982' E. of W. 1/4 corner, Sec. 2, T 2S, R.4E.

Use: Domestic Drilling Method: Rotary

Casing: 4-1/2" Perforations: 110-130 ft., 180-200 ft.

No screen or gravel packing

Static level: 42' (5/30/64) Discharge test: 30 gpm

Log:

0 - 3'	soil
3 - 19'	clay
19 - 59'	andesite
59 - 65'	clay, moist
65 - 147'	red andesite
147 - 210'	grey andesite
210 - 216'	red shale
216 - 220'	gray sandstone

Well No. 34356 (D-2-4) 2 cb

Owner: Mark Cornaby - new

Location: 320' S., 812' E., W-1/4 corner, Sec. 2, T.2 N., R.4E.

Use: Domestic Drilling Method: Rotary

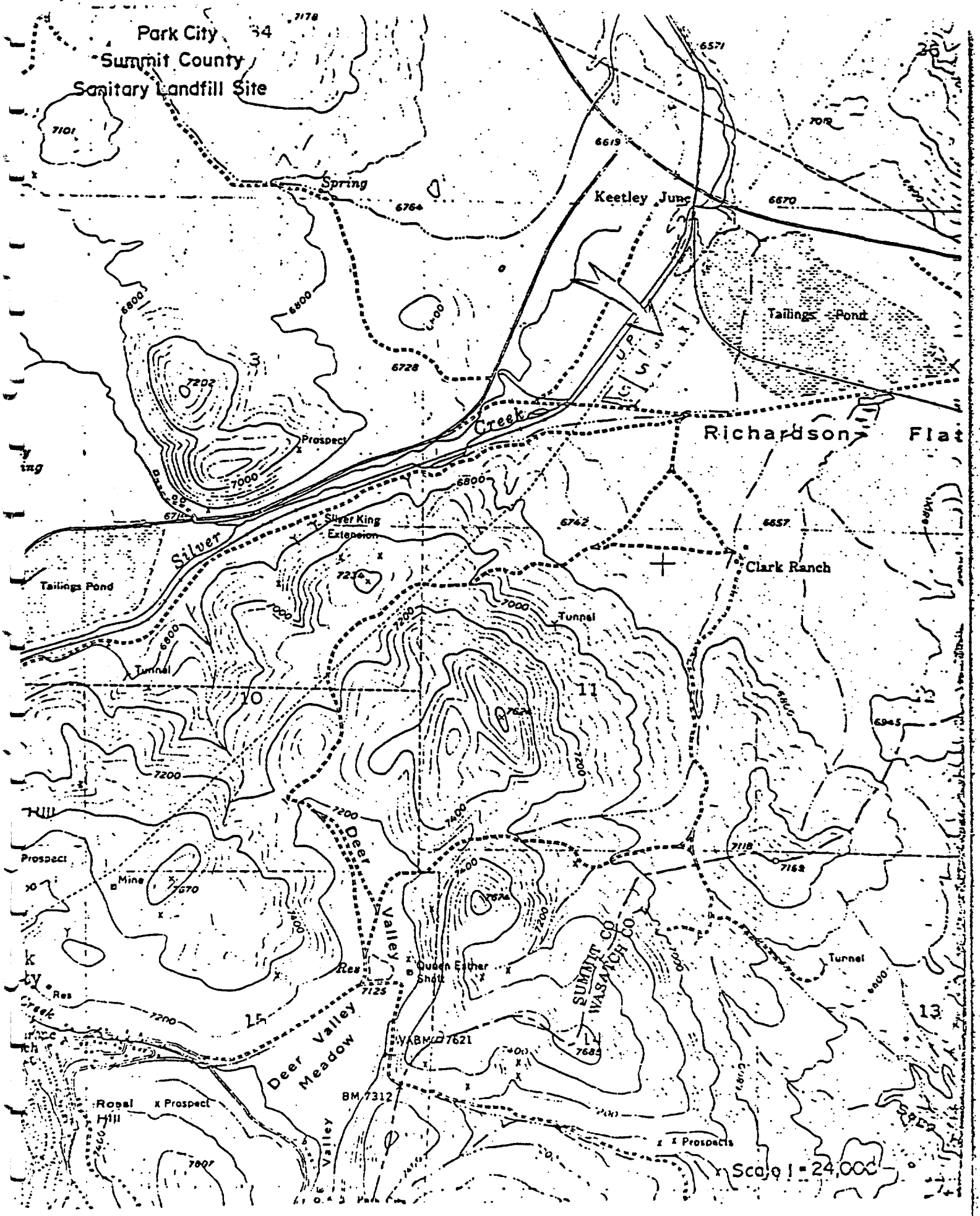
Casing: 6" Perforations: 165-171, 190-222 ft.

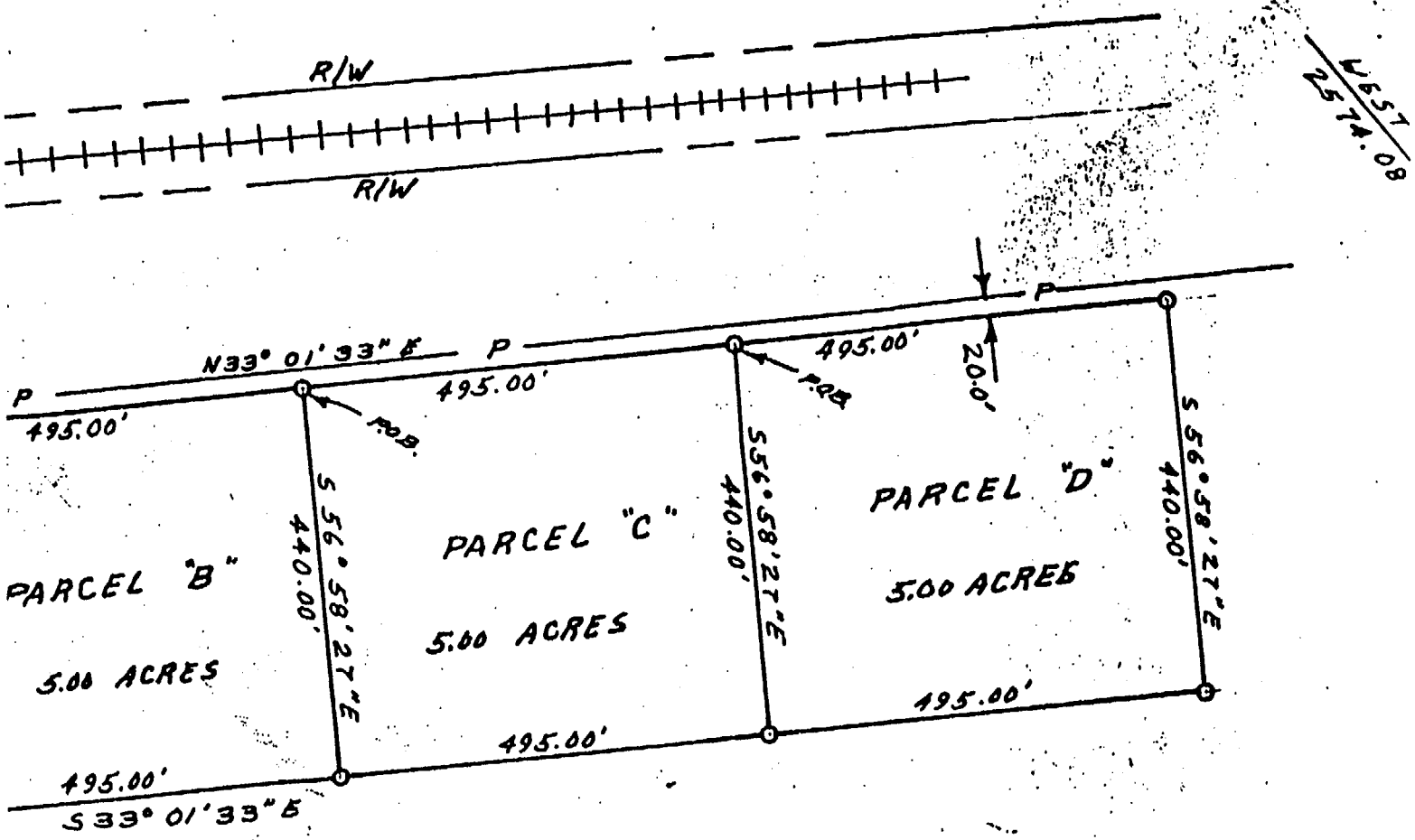
No screen, gravel - 1/4" from 190-222 ft.

Static level: 55' (8/19/62) Discharge test: ---------

Log:

0 - 3'	soil
3 - 10'	brown clay
10 - 30'	yellow clay
30 - 90'	Decomposed andesite
90 - 95'	yellow clay
95 - 108'	andesite
108 - 130'	gray clay
150 - 175'	fractured andesite
175 - 198'	gray clay
198 - 207'	fractured andesite
207 - 214'	sand
214 - 221'	fractured andesite
221 - 222'	clay


Park City
Summit County
Sanitary Landfill Site
Keetley Junc
Tailings Pond
Richardson Flat
Clark Ranch
Silver King Extension
Silver Creek
Tunnel
Prospect
Mine
Deer Valley
Deer Valley Meadow
Queen Esther Shaft
SUMMIT CO
WASATCH CO
VABM 7621
BM 7312
Scale 1 = 24,000


R/W
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WEST
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P
N33° 01' 33" E
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495.00'
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S 56° 58' 27" E
440.00'
556° 58' 27" E
440.00'
S 56° 58' 27" E
440.00'
PARCEL "B"
5.00 ACRES
PARCEL "C"
5.00 ACRES
PARCEL "D"
5.00 ACRES
495.00'
495.00'
495.00'
S 33° 01' 33" E

EXHIBIT 15-K

UNITED PARK CITY MINES COMPANY
309 KEARNS BUILDING
SALT LAKE CITY, UTAH 84101

June 4, 1985

MEMORANDUM

To: E. L. Osika, Jr.

From: Kerry C. Gee

Subject: Park City Municipal Corporation Noncompliance with certain Terms and Conditons Regarding the Operation of their Sanitary Landfill.

After careful review of the attached Exhibits A,B,C, and D and observations made during several visits to the Landfill site it is apparent that the City has not complied with certain sections of the original and amended leases (Exhibits A and B), the Utah State Code of Solid Waste Disposal Regulations (Exhibit C) and their plans as submitted to the State Division of Health (Exhibit D). In addition to violating specific agreements in the original lease, the City's dumping and filling has crossed over the described property boundaries. This has occured to varying degrees along the western and eastern borders of the parcels. The specific items of noncompliance are detailed below.

ORIGINAL LEASE

1. Section 2, paragraphs b and c. These paragraphs state that the City shall complete final clean-up and compaction of the specified parcel in accordance with Section 6 of that document. This should have been completed before utilizing adjacent parcels for dump space. Final clean-up has not been done on Parcels A and B. The City is currently utilizing portions of Parcels A and B for the storage of junked cars and piles of fill dirt. The parcels have not been completely compacted nor have they been covered with any topsoil. The material exposed on the surface consists of a mixture of concrete and asphalt slabs of varying size, alluvial material and an assortment of construction material including wood, rebar, metal culverts and pipe. The alluvial material exposed contains boulders up to three feet in diameter and appears to have originated beneath the topsoil zone, which makes the establishment of any vegetation difficult.

2. Section 3. This section states that the City will utilize the leased premises "in accordance with accepted sanitary landfill refuse disposal procedures and in a safe and sanitary manner which is not unsightly, does not emit noxious odors and is not offensive or dangerous to owners or occupants of adjoining or surrounding property." On more than one occasion, companies or individuals leasing sand and gravel rights on adjacent United Park City Mines Company ground have complained to me about material being negligently dumped or blown into of the sand and gravel operations.

3. Section 4. This section states, in general, that the City's operations on the leased property will comply with all federal, state and local laws applicable to those operations. Paragraph (a) of the "Site Operation" section of the Utah State Code of Solid Waste Disposal Regulations stated "At least six inches of earth shall be placed after each operating day over all waste material after compaction to the smallest practical volume. A minimum of two feet of earth shall be placed over any completed segment of the site. Final grading shall provide effective surface drainage." A visit to the site on June 3, 1985 revealed that material observed being deposited on a visit on May 18, 1985 had been compacted but not yet covered. There were areas containing several thousand square feet of refuse that had not yet been covered by earth. On the Parcels that were complete, final grading to establish drainage had not yet been done.

4. Section 5. In this section of the original lease, the City agreed to fill the land to a level not over three feet above the natural terrain on the ground west and east of the proposed Landfill. Plate 1 is a map that shows very rough contours of the Landfill site. Portions of Parcels A and B are as much as fifteen feet above the natural terrain adjacent to the site. In the areas currently being utilized, the top of fill varies from one to twelve feet above the natural terrain.

5. Section 6. This section states that when the City is through with a Parcel of ground, it will compact the material to not less than 90% of maximum density and cover it with not less than two feet of topsoil. As mentioned earlier, the material has not been completely compacted nor has it been covered with any topsoil.

6. Section 7. In this section, the City agreed to maintain a six foot high fence around the portion of the property being utilized. At this time, there is a fence along the southwestern edge of the property adjacent to the old highway and down the western most edge of the Parcels for a distance of roughly 1,100 feet. The fence is not continuous around the property, is in a state of general disrepair and in places has been buried by concrete slabs and fill dirt.

VIOLATIONS IN THE FIRST AMENDMENT TO LEASE.

1. Section 3. In this section, the City agrees to use the extension to bring the status of the Landfill into compliance with the terms of the original lease, and was not to be used for any additional fill material. On a site visit made June 3, 1985, I noticed that material had been dumped on the extension that appeared to be from a source other than the original Landfill. This material extends over the boundary of the extension onto property not leased to the City. It appears that the City has used this extension to expand the Landfill rather than to utilize it for compliance with the original lease.

2. Section 4, Paragraph (a). The City agreed to complete all leveling and clean-up within 90 days of the amended lease dated August 1, 1981. As of this writing, the material on the Extension has not been leveled or cleaned-up.

3. Section 4, Paragraph (b). The City agreed to enclose the Extension with a chain link fence which has not been done.

4. Section 4, Paragraph (c). The City agreed to police and maintain a 400 foot perimeter around the leased area and the Extension and to promptly collect and properly dispose of any refuse within the area. This has not been done. There are abundant piles of asphalt and concrete slabs on the gravel pit access road west of the Landfill and numberous piles of garbage, trash and other debris scattered haphazardly all around the Landfill site and within this 400 foot perimeter. Paragraph (g) of the "Site Operation" section of the Utah State Code of Solid Waste Disposal Regulations states "litter control along access roads and at the site shall be

accomplished by clean-up of the areas as often as necessary to prevent unsightly conditions caused by blowing paper and other misplaced refuse." This has not been done. The entire route of U-248 from the Prospector Square area to the junction with the old highway and then along the old highway to the landfill is littered with trash, garbage and other debris to a point of almost causing a vehicle safety hazard. On more than one occasion, I have seen material falling or blowing off vehicles headed to the dump.

The City is currently operating the Landfill in Parcels C and D. Due to the high ground water level, the City has to dump refuse on top of the ground and bury it as apposed to digging and filling trenches. This practice will greatly decrease the amount of refuse that can be deposited within the present Landfill. It also makes it almost impossible for them to comply with the height requirement in Section 5 of the original lease.

L E A S E

THIS LEASE, made and entered into this 12th day of October, 1973, by and between UNITED PARK CITY MINES COMPANY, a Delaware corporation (hereinafter designated "UPC"), GREATER PARK CITY COMPANY, a Utah corporation (hereinafter designated "GPC"), and PARK CITY, a Utah municipal corporation (hereinafter designated "City"),

WITNESSETH:

WHEREAS, City maintains and operates a garbage dump and disposal area which is situated upon properties owned by UPC and which are subject to a Purchase Agreement whereby GPC has agreed to purchase said properties; and

WHEREAS, UPC and GPC (which parties are hereinafter collectively designated "Lessors") desire that City abandon and cease to use said dump site and that it utilize another area or areas for dumping and disposal purposes, and City is willing to do so upon the terms and conditions herein contained.

NOW, THEREFORE, for and in consideration of the mutual promises, covenants and agreements hereinafter set forth to be kept and performed by the parties hereto, Lessors hereby demise, lease and let to City all of the right and title of Lessors, and each of them, in and to the following described real property (hereinafter designated the "Leased Premises") situated in Summit County, State of Utah:

Parcel A

Beginning at a point on the Northerly right-of-way line of a County Road, said point being South 3252.39 feet and West 2574.08 feet from the Northeast corner of Section 2, Township 2 South, Range 4 East, Salt Lake Base and Meridian, and running thence North 33° 01'33" East 612.65 feet; thence South 56°58'27" East 440.00 feet; thence South 33°01'33" West 377.37 feet to the North right-of-way line of a County Road; thence North 85°06'30" West along said right-of-way line 498.95 feet to the point of beginning. Contains 5.00 acres.

Parcel B

Beginning at a point South 2738.73 feet and West 2240.18 feet from the Northeast corner of Section 2, Township 2 South, Range 4 East, Salt Lake Base and Meridian, and running thence North 33°01'33" East 495.00 feet; thence South 56°58'27" East 440.00 feet; thence South 33°01'27" West 495.00 feet; thence North 56°58'27" West 440.00 feet to the point of beginning. Contains 5.00 acres.

Parcel C

Beginning at a point South 2323.71 feet and West 1970.40 feet from the Northeast corner of Section 2, Township 2 South, Range 4 East, Salt Lake Base and Meridian, and running thence North 33°01'33" East 495.00 feet; thence South 56°58'27" East 440.00 feet; thence South 33°01'33" West 495.00 feet; thence North 56°58'27" West 440.00 feet to the point of beginning. Contains 5.00 acres.

Parcel D

Beginning at a point South 1908.69 feet and West 1700.62 feet from the Northeast corner of Section 2, Township 2 South, Range 4 East, Salt Lake Base and Meridian, and running thence North 33°01'33" East 495.00 feet; thence South 56°58'27" East 440.00 feet; thence South 33°01'33" West 495.00 feet; thence North 56°58'27" West 440.00 feet to the point of beginning. Contains 5.00 acres.

Together with an easement and right of way for a roadway forty (40) feet in width abutting and parallel to the Westerly boundaries of said parcels and

extending from the County Road which abuts the South boundary of the above described Parcel A and was formerly known as State Highway No. 6 to the portion of the Leased Premises then actively being utilized for dumping purposes pursuant hereto.

Expressly excepting and reserving to UPC all ores and minerals situated in, upon or under said Leased Premises, together with all rights in connection with or relative to the mining, removal and sale of the same.

TO HAVE AND TO HOLD unto City, its successors and assigns until terminated or surrendered, as herein provided.

In consideration of such leasing and of the covenants and agreements hereinafter set forth, it is mutually agreed by and between the parties hereto as follows:

1. City shall have the right to utilize the Leased Premises for the construction, utilization and maintenance of a well-engineered sanitary land fill-type garbage dump for the deposit and disposal of garbage and waste materials collected by or for City within the corporate limits of City. City agrees that it will not utilize the Leased Premises for any purposes other than those specified in this Section 1 without the written consent of Lessors having been first had and obtained.

2. (a) City shall be entitled to immediate possession of the portion of the Leased Premises designated as Parcel A but shall not be entitled to possession of any other parcel included in the Leased Premises, except at such times as are hereinafter in this Section 2 provided.

(b) At such time as City elects to obtain possession of and utilize Parcel B pursuant hereto, it shall give

written notice to Lessors, whereupon City shall be entitled to possession of Parcel B. Within sixty (60) days following delivery of said notice, City shall complete final cleanup and compaction of Parcel A in accordance with Section 6 hereof.

(c) At such time as City elects to obtain possession of and utilize Parcel C pursuant hereto, it shall give written notice to Lessors, whereupon City shall be entitled to possession of Parcel C. Within sixty (60) days following the delivery of said notice, City shall complete final cleanup and compaction of Parcel B in accordance with Section 6 hereof and shall deliver possession of Parcel B to Lessors, whereupon this Lease shall be deemed terminated insofar as it relates to Parcel B, and City shall thereafter have no right, title or interest in or with relation to said Parcel B.

(d) At such time as City elects to obtain possession of and utilize Parcel D pursuant hereto, it shall give written notice to Lessors, whereupon City shall be entitled to possession of Parcel D. Within sixty (60) days following the delivery of said notice, City shall complete final cleanup and compaction of Parcel C in accordance with Section 6 hereof and shall deliver possession of Parcel C to Lessors, whereupon this Lease shall be deemed terminated insofar as it relates to Parcel C, and City shall thereafter have no right, title or interest in or with relation to said Parcel C.

(e) At such time as City elects to relinquish possession of and the right to utilize Parcel D pursuant hereto,

it shall give written notice to Lessors. Within sixty (60) days following delivery of said notice, City shall complete final cleanup and compaction of Parcel D in accordance with Section 6 hereof and shall deliver possession of Parcel D to Lessors. Upon completion of final completion and compaction of Parcel D in accordance with Section 6 hereof and delivery of possession of Parcel D to Lessors, Lessors agree that they will execute and deliver to City a quitclaim deed, quitclaiming to City all of the right, title and interest of Lessors in and to Parcel A, subject to an exception and reservation to UPC of all ores and minerals situated in, upon or under said Parcel A, together with all rights in connection with or relating to the mining, removal or sale of the same, including, but not limited to, the right to enter upon or utilize such portion of Parcel A as it deems necessary or desirable for the purpose of exploring for, developing, mining and removing said ores and minerals. Lessors agree that they will not at any time prior to delivery of said quitclaim deed convey or dispose of any of the right, title or interest of Lessors in or to said Parcel A. Upon delivery of said quitclaim deed, this Lease shall be deemed terminated, and City shall thereafter have no right, title or interest under the terms of this Lease.

(f) City shall not at any time be entitled to possession of more than two (2) parcels of the real property included in the Leased Premises, except during the 60-day period following notice of the election of City to obtain

possession of and utilize an additional parcel, during which 60-day period City shall complete final cleanup and compaction of the parcel which it has elected to cease utilizing and surrender, as provided by this Section 2.

3. City agrees that it will, at all times during the term hereof, establish, maintain and utilize the Leased Premises, in accordance with accepted sanitary land-fill refuse disposal procedures and in a safe and sanitary manner which is not unsightly, does not emit noxious odors and is not offensive or dangerous to owners or occupants of adjoining or surrounding property.

4. City agrees that all operations upon or in connection with the Leased Premises will comply with all federal, state and local laws, rules and regulations applicable to the Leased Premises or the operations or activities conducted upon or in connection with the Leased Premises, including, but not limited to, the rules and regulations of the Utah State Board of Health, the Summit County Board of Health and all other applicable rules, regulations and orders of any duly constituted authority having jurisdiction over the use or operation of the Leased Premises by City.

5. City agrees that, in the utilization of the Leased Premises, it will fill the same to, but not above, a level determined by projecting a straight line between a point three (3) feet above the natural terrain on the easterly side and a point three (3) feet above the natural terrain on the westerly side of the portion of the Leased Premises then being filled.

6. City agrees that, upon completion of its utilization of a parcel of the Leased Premises and election by City to surrender the same to Lessors in accordance with Section 2 hereof, City will clean up and either bury or remove from the parcel which it elects to surrender all loose material and will compact the surface of said parcel to not less than ninety per cent (90%) of maximum density and will cover the entire surface thereof with a layer of topsoil not less than two (2) feet thick.

7. City agrees that, at all times during which it has possession of any portion of the Leased Premises pursuant hereto, it will maintain a six (6) foot high chain link fence surrounding the portion of the Leased Premises which is in the possession of City. Further, City agrees that said fence will be equipped with gates of the same type and of equal height which shall at all times either be locked or shall be attended by a representative of the City.

8. City agrees that it will indemnify, defend and hold Lessors, and each of them, harmless from any claims, demands or causes of action for injury to persons or property or in any other manner arising out of the possession, utilization or operation of the Leased Premises by City or any costs or expenses incurred by City in connection therewith. City agrees that it will, at all times during the term of this Lease, purchase and maintain public liability and property damage insurance designating City and Lessors as the insured

parties and covering the Leased Premises, as well as all operations upon the Leased Premises, which insurance shall be issued by a company or companies acceptable to Lessors and shall have limits of liability not less than as follows:

Public Liability:

Each Person	$100,000
Each Occurrence	$300,000

Property Damage:

Each Occurrence	$100,000
Aggregate Liability	$300,000

City agrees that it will furnish to Lessors a certificate or certificates issued by the appropriate insurance company or companies, certifying that such insurance is in effect and agreeing that such insurance will not be cancelled without giving at least ten (10) days' advance written notice to Lessors.

9. City agrees that it will, at all times during the term of this Lease, carry and maintain such insurance covering all persons working in, on or in connection with the Leased Premises as will fully comply with the requirements of the applicable laws of the State of Utah, covering workmen's compensation and occupational disease and disability, and that it will comply with the terms and provisions of all applicable laws of the United States and of the State of Utah pertaining to social security, unemployment compensation, wages, hours and conditions of labor. City agrees that it will indemnify,

defend and hold Lessors harmless from payment of any damages or other liability occasioned by failure of City to comply with said laws.

10. City agrees that it will assume, pay and discharge any and all liabilities, claims or demands arising out of labor or materials furnished to or for the benefit of City or the Leased Premises, or in any way connected with activities or work upon the Leased Premises, and that it will maintain the Leased Premises free and clear of any and all liens, claims or encumbrances of any type or description whatsoever arising out of the failure of City to make such payments when due. City agrees that, prior to commencement of construction of any addition to, alteration or repair of any building, structure or improvement upon the Leased Premises, it will obtain and deliver to Lessors a bond issued by an insurance company acceptable to Lessors, meeting the requirements of Section 14-1-1, Utah Code Annotated, 1953, and guaranteeing the prompt payment for materials furnished and labor performed in connection with said construction, addition, alteration or repair.

11. City agrees that it will, at all times during the term of this Lease, pay all taxes which are levied or assessed against the portions of the Leased Premises which are then being utilized or occupied by City, as well as any improvements, activities or operations thereon. If City has possession of a portion of the Leased Premises for a portion less than all of a calendar year, the real property taxes with relation thereto

shall be prorated based upon the portion of the calendar year during which possession thereof is held by City. City agrees that it will furnish to Lessors at least five (5) days before the final date upon which payment thereof becomes due receipts or other evidence satisfactory to Lessors, indicating that such taxes have been paid. The provisions of this Section 11 shall not limit or restrict the right of City to contest in good faith, by appropriate proceedings, any taxes which it feels are illegal or improperly assessed, provided that such action shall not place the title to the Leased Premises in jeopardy.

12. UPC specifically excepts and reserves all ores and minerals situated in, upon or under the Leased Premises, together with all rights in connection with or relating to the mining, removal or sale of the same, including, but not limited to, the right to enter upon or utilize such portion of the Leased Premises as it deems necessary or desirable for the purpose of exploring for, developing, mining and removing said ores and minerals.

13. Authorized representatives of Lessors shall have the right, at reasonable times and at the sole risk of Lessors and such representatives, to enter upon the Leased Premises and any improvements or facilities thereon for the purpose of inspecting the same and all operations and activities being conducted in connection therewith.

14. This Lease is executed by Lessors without warranties or representations as to title or otherwise. It is agreed that this Lease shall relate only to such titles as Lessors have in and with relation to the Leased Premises, and Lessors shall have no liability or obligation to City in the event that City should for any reason be divested of possession of any portion of the Leased Premises by persons claiming or holding title thereto.

City acknowledges and agrees that it has examined the Leased Premises and conducted such investigations and studies with relation thereto as it deems advisable and has satisfied itself as to the nature and condition of the Leased Premises, the uses to which they may be put and all pertinent factors with relation thereto. City acknowledges that Lessors have made no warranties or representations as to the Leased Premises of any type whatsoever. City agrees that it will accept the Leased Premises in the condition in which they now exist without representation or warranty, express or implied, in fact or by law, by Lessors, and without recourse against Lessors as to the nature, condition or usability thereof or the uses to which the Leased Premises may be put.

15. In the event that Lessors should elect to utilize any portion of the Leased Premises or to grant others the right to utilize the same, Lessors shall have the right to substitute for the real property comprising the Leased Premises as aforesaid other real property of a type, size and location which is not less suitable for use by City for the purposes

for which this Lease is granted. In the event that Lessors should elect to substitute other property pursuant to this Section 15, they shall give written notice of said fact to City, whereupon the parties shall execute an appropriate amendment to this Lease evidencing such substitution. Upon such substitution being accomplished and said amendment executed, this Lease shall be deemed terminated with relation to the portions of the above described real property for which such substitution has been made.

16. City agrees that, concurrently with the execution hereof, and as a consideration for the lease herein granted, City will execute, and cause to be executed by the other grantors named therein, a Quitclaim Deed in the form of Exhibit A attached hereto and by this reference made a part hereof. The execution and delivery of said Quitclaim Deed shall not be deemed a waiver or relinquishment of the rights of City under or in any manner affect that certain Lease dated May 20, 1971, between GPC, as "Lessor," and City, as "Lessee," which Lease relates to 9.2 acres used as a baseball field and park. Said Lease shall remain in force and effect and unaffected by said Quitclaim Deed.

17. City agrees that, within sixty (60) days following the date hereof, it will fumigate or cause to be fumigated and will fill, cover with a layer of topsoil not less than two (2) feet thick and compact the area presently being utilized by City as a garbage dump. GPC agrees that it will, without charge to City, furnish the earth-moving equipment necessary to complete

said filling and compaction, together with operators for said earth-moving equipment.

18. Should any default in any of the terms or provisions hereof occur, Lessors shall give written notice to City designating such asserted default. City shall thereafter have a period of thirty (30) days following the effective date of such notice within which to correct the defaults of which it has received notice. Should City fail to correct said defaults within said 30-day period, Lessors may, at their election, upon written notice to City, cancel and terminate this Lease. It is agreed that, in addition to the remedy of cancellation and termination as hereinabove in this Section 18 provided, Lessors shall have the right, by appropriate legal action, to compel specific performance by City of its obligations hereunder, to enjoin any default or breach by City, or to recover damages from City arising out of such breach or default.

19. Any notice herein contemplated to be given to Lessors shall be sufficient if given in writing by registered or certified mail and, in either case, addressed to:

United Park City Mines Company
309 Kearns Building
Salt Lake City, Utah 84101

and

Greater Park City Company
P. O. Box 39
Park City, Utah 84060

or to such other address or addresses as Lessors shall hereafter designate to City in writing.

Any notice herein contemplated to be given to City shall be sufficient if given in writing by registered or certified mail and, in either case, addressed to:

Park City Corporation
City Hall
Park City, Utah 84060

or to such other address or addresses as City shall hereafter designate to Lessors in writing.

Notices by mail shall be deemed effective and complete at the time of posting and mailing in accordance herewith.

20. In the event that title to the Leased Premises should be conveyed by UPC to GPC during the term of this Lease, GPC shall thereupon succeed to all rights, duties and obligations of Lessors hereunder, and UPC shall thereafter have no rights, duties or obligations as a Lessor hereunder.

In the event that the Purchase Agreement between UPC and GPC should at any time during the term hereof be terminated insofar as the Leased Premises are concerned, or in the event that GPC should surrender or convey to UPC all of its right, title and interest in and to the Leased Premises, UPC shall thereupon succeed to all rights, duties and obligations of the Lessors hereunder, and GPC shall thereafter have no rights, duties or obligations as a Lessor hereunder.

21. City shall not have the right to sell, assign, transfer or sublet any portion of its rights under this Lease, or any interest herein, without the written approval of Lessors having been first had and obtained.

22. Subject to the restrictions contained in Paragraph 21 hereof, this Lease is and shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

23. This Lease shall be interpreted in accordance with the laws of the State of Utah.

Dated the day and year first above written.

UNITED PARK CITY MINES COMPANY

By _____
President

ATTEST:

_____
Secretary

GREATER PARK CITY COMPANY

By _____
President

ATTEST:

_____
Assistant Secretary

PARK CITY, a Utah municipal corporation

By _____
Mayor

ATTEST:

_____
Clerk

STATE OF UTAH)
: ss.
COUNTY OF SALT LAKE)

On this 12th day of October, 1972, personally appeared before me MILES P. ROMNEY, who, being by me duly sworn, did say that he is the President of UNITED PARK CITY MINES COMPANY, a Delaware corporation, and that the within and foregoing Lease was signed in behalf of said corporation by authority of a resolution of its Board of Directors, and said MILES P. ROMNEY duly acknowledged to me that said corporation executed the same and that the seal affixed is the seal of said corporation.

My Commission Expires:

June 8, 1975

Notary Public

Residing at Salt Lake City, Utah

STATE OF UTAH)
: ss.
COUNTY OF SUMMIT)

On this 13th day of October, 1972, personally appeared before me J. WARREN KING, who, being by me duly sworn, did say that he is the President of GREATER PARK CITY COMPANY, a Utah corporation, and that the within and foregoing Lease was signed in behalf of said corporation by authority of a resolution of its Board of Directors, and said J. WARREN KING duly acknowledged to me that said corporation executed the same and that the seal affixed is the seal of said corporation.

My Commission Expires:

June 8, 1975

Notary Public

Residing at: Salt Lake City, Utah.

STATE OF UTAH)
: ss.
COUNTY OF SUMMIT)

On this 4th day of October, 1973, personally appeared before me William Sullivan, who, being by me duly sworn, did say that he is the Mayor of PARK CITY, a Utah municipal corporation, and that the within and foregoing Lease was signed in behalf of said corporation by authority of a resolution of the Park City Commission, and said ~~Tom~~ William ~~Sullivan~~ duly acknowledged to me that said corporation executed the same and that the seal affixed is the seal of said corporation.

My Commission Expires:

1-11-74

Notary Public

Residing at:

QUITCLAIM DEED

For and in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration, receipt and sufficiency whereof are hereby acknowledged, PARK CITY, a Utah municipal corporation, and ERNEST F. FUELLING and FUELLING, his wife (hereinafter designated "Grantors"), hereby release, remise and forever quitclaim unto UNITED PARK CITY MINES COMPANY, a Delaware corporation, all of the right, title and interest of Grantors, and each of them, in and to the following described real property situated in Summit County, State of Utah:

Beginning at a point which is South 89°25' East 2,368.07 feet from the center of Section 8, Township 2 South, Range 4 East, Salt Lake Meridian;
thence South 49°21'04" East 260.97 feet;
thence South 76°11'06" East 439.72 feet;
thence South 00°52'53" East 260.03 feet;
thence South 49°56'21" East 287.45 feet;
thence South 720.00 feet;
thence East 201.00 feet;
thence South 09°41'20" East 415.93 feet;
thence South 15°57'54" East 338.78 feet;
thence North 79°51'31" East 66.95 feet;
thence North 76°22'45" East 212.53 feet;
thence North 28°43' West 59.50 feet;
thence North 34°35' West 157.00 feet;
thence North 70°00'29" East 215.00 feet;
thence North 74°24'15" East 49.11 feet;
thence North 64°47'30" East 175.00 feet;
thence South 25°12'30" East 140.00 feet;
thence South 87°45'03" East 684.68 feet;
thence South 2°19'38" East 376.31 feet;
thence South 8°09'09" East 363.65 feet;
thence South 89°29'30" East 50.00 feet;
thence South 15°56'25" East 174.25 feet;
thence South 20°08'45" East 120.10 feet;

EXHIBIT A

thence South 24°55'01" East 120.11 feet;
thence South 28°32'25" East 191.05 feet;
thence South 00°45'47" West 95.00 feet;
thence South 30°50'41" East 925.68 feet;
thence North 58°02' East 275.00 feet;
thence South 31°58' East 682.40 feet;
thence South 58°02' West 67.30 feet;
thence South 34°35' East 212.74 feet;
thence East 167.16 feet;
thence North 00°34'06" East 2,072.88 feet;
thence North 89°18' West 2.98 feet;
thence North 289.25 feet;
thence North 82°14' East 30.90 feet;
thence North 16°15' West 240.00 feet;
thence North 80°43' East 37.00 feet;
thence North 799.90 feet;
thence South 89°31' East 1,348.62 feet;
thence North 01°20'32" East 1,330.05 feet;
thence North 89°49'11" West 2,643.32 feet;
thence North 600.00 feet;
thence South 52° West 174.89 feet;
thence South 56° West 124.93 feet;
thence South 60°35' West 164.92 feet;
thence South 64°40' West 207.91 feet;
thence South 72°20' West 799.72 feet;
thence North 89°34'45" West 1,318.90 feet;
thence North 89°25'00" West 261.83 feet
to the point of beginning.

Excluding therefrom the following:

Beginning at the Northwest corner of the Southwest Quarter of Section 9, Township 2 South, Range 4 East, Salt Lake Meridian;
thence South 20.0 feet;
thence South 89°00' East 76.0 feet;
thence South 73°48' East 63.5 feet;
thence South 65°40' East 84.0 feet;
thence East 176 feet;
thence North 33°00' West 87.5 feet;
thence West 342 feet to the point of beginning.

Beginning at a point which is North 89°34' 44" West 832 feet from the Northeast corner of the Southwest Quarter of Section 9, Township 2 South, Range 4 East, Salt Lake Meridian; thence North 89°34'45" West 180 feet;
thence South 00°25'06" East 140 feet;
thence South 89°34'45" East 180 feet;
thence North 00°25'06" West 140 feet
to the point of beginning.

Beginning at a point located 1,579 feet
East and 360 feet North of the Southwest
corner of Section 9, Township 2 South,
Range 4 East, Salt Lake Meridian;
thence South 23°30' East 55 feet;
thence North 59°32'30" East 43.4 feet;
thence North 31°18' West 52.0 feet;
thence South 60°38' West 136 feet
to the point of beginning.

Dated this 4th day of October, 1973.

PARK CITY, a Utah municipal corporation

By _____
Mayor

ATTEST:

_____
Clerk

_____
Ernest F. Fuelling

_____
Fuelling

STATE OF UTAH)
: ss.
COUNTY OF SUMMIT)

On this _____ day of _____, 1971, personally appeared before me _____, who, being by me duly sworn, did say that he is the Mayor of PARK CITY, a Utah municipal corporation, and that the within and foregoing Quitclaim Deed was signed in behalf of said corporation by authority of a resolution of the Park City Commission, and said _____ _____ duly acknowledged to me that said corporation executed the same and that the seal affixed is the seal of said corporation.

My Commission Expires: _____ Notary Public

_____ Residing at:

STATE OF UTAH)
: ss.
COUNTY OF SUMMIT)

On this _____ day of _____, 1971, personally appeared before me ERNEST F. FUELLING and _____ FUELLING, his wife, signers of the foregoing Quitclaim Deed, who duly acknowledged to me that they executed the same.

My Commission Expires: _____ Notary Public

_____ Residing at:

FIRST AMENDMENT

TO

LEASE

THIS FIRST AMENDMENT TO LEASE, dated effective as of August 1, 1981, is by and between UNITED PARK CITY MINES COMPANY, a Delaware corporation, and NORANDA MINING INC., a Delaware corporation (herein collectively called "Lessors"), and PARK CITY MUNICIPAL CORPORATION, a Utah municipal corporation (herein called "Lessee").

RECITALS

A. United Park City Mines Company and Greater Park City Company executed and delivered to Lessee that certain Lease dated October 12, 1973 (herein called the "Basic Lease") for purposes of operating and maintaining a municipal sanitary landfill on certain property in Summit County, Utah now owned and controlled by Lessors and more particularly described in the Basic Lease (herein called the "Leased Premises").

B. Lessee has requested that certain additional property consisting of 1.035 acres, more or less, adjacent to the Leased Premises (herein called the "Extension") be added to the Leased Premises so that Lessee can fully comply with certain of the terms and conditions of the Basic Lease.

C. Lessors desire to amend the Basic Lease and to lease the Extension to Lessee for the sole purpose of assisting Lessee in Lessee's efforts to fully comply with all of the terms and conditions of the Basic Lease and to bring the condition of the landfill into compliance with the depth of fill and cover requirements of the Basic Lease.

AGREEMENT

IN CONSIDERATION of the foregoing and of the promises, covenants and agreements contained herein, Lessors and Lessee agree as follows:

1. Grant. Lessors hereby lease to Lessee, and the Basic Lease is hereby amended by adding to the Leased Premises the nonexclusive right to use the Extention, consisting of a 1.035 acre parcel, more or less, more particularly described in Exhibit "A" attached hereto and made a part hereof. The non-exclusive grant of the Extension is subject to all the terms and conditions of the Basic Lease and reserves to Lessors all of the same rights and privileges reserved in the Basic Lease with respect to the grant of the Leased Premises.

2. Confirmation of Basic Lease. Except as specifically set forth herein, all terms and conditions of the Basic Lease shall remain in full force and effect and shall apply with equal force and effect to the Extension; provided, however, that if any provisions of this Amendment shall in any way conflict with the provisions of the Basic Lease, the provisions of this Amendment shall control.

3. Limitations on Use of the Extention. The parties agree that the Extension is to be used solely for the purpose of bringing the existing use of the Leased Premises into full compliance with the terms and conditions of the Basic Lease and, in particular, sections two, five and six of the Basic

Lease. The Extension shall not be used as additional space for new fill or for any other activity.

4. Additional Covenants by Lessee. (a) Lessee covenants and agrees that it will promptly commence the clean-up and leveling of the existing landfill by utilizing the Extension to the extent possible. Lessee agrees to complete such clean-up and leveling within 90 days.

(b) As soon as practical following the clean-up and leveling described in (a) above, Lessee shall enclose the Extension with a suitable chain link fence.

(c) Lessee further agrees to police and maintain the perimeter of the Leased Premises and the Extension to a distance of 400 feet from such perimeter and to promptly collect and dispose of any refuse, garbage or other waste placed within that area.

5. Term. The term of this Amendment shall commence upon the date first written above and shall continue until such time as the Basic Lease terminates or expires.

6. Warranties. This Amendment is entered into without any warranties, express or implied, on the part of Lessors as to title or otherwise and Lessee agrees that it will accept the Extension and title to the Extension in the condition in which they now exist.

7. Invalidity of Particular Provisions. If any term or provision of the Basic Lease or this Amendment or the application thereof to any person or circumstances shall, to any extent, be invalid or unenforceable, the remainder of the Basic Lease and this Amendment, or the application of such term or

provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each term and provision of the Basic Lease and this Amendment shall be valid and be enforced to the fullest extent permitted by law.

8. Attorneys' Fees. In the event any action is required to enforce the terms and conditions of this Amendment or of the Basic Lease, whether or not such action involves initiation of formal legal proceedings, the prevailing party in such action shall be entitled to recover from the other party all costs, expenses and attorneys' fees related to such action.

9. Notices. (a) Any and all notices or other communications or documents which may be required or given by the terms and provisions of the Basic Lease and this Amendment or otherwise, shall be in writing and shall be deemed to have been duly given when sent by registered mail, postage prepaid, and deposited with a United States Post Office, Branch Post Office, Post Office Station or Substation regularly maintained, as follows:

Lessee:

Park City Corporation
City Hall
Park City, Utah 84060

Lessors:

Noranda Mining Inc.
Ontario Project
P. O. Box 1450
Park City, Utah 84060
Attn: John Cesar, Area Production Manager

and

United Park City Mines Company
309 Kearns Building
Salt Lake City, Utah 84101
Attn: E. L. Osika, Secretary-Treasurer

(b) Lessee or Lessors may designate in writing such other addresses or such other Agent or Agents from time to

time. The postmark date shall be deemed to be the date of service.

10. No Oral Modification. All prior understandings and agreements between the parties are merged within this Amendment, which together with the Basic Lease fully and completely sets forth the understanding of the parties; and the Basic Lease and this Amendment may not be further changed in any manner other than by an agreement in writing and signed by the party against whom enforcement of the change or termination is sought.

11. Inurement. Subject to the restrictions in Section 21 of the Basic Lease, the covenants and agreements herein contained shall bind and inure to the benefit of Lessors, their successors and assigns, and Lessee, its successors and assigns.

12. Captions. The headings of this Amendment are for convenience and reference only and in no way define, limit or describe the scope or intent of this Amendment nor in any way affect this Amendment.

13. Time. Time is of the essence in the Basic Lease and in this Amendment and in every term, covenant, condition and provision contained in both.

IN WITNESS WHEREOF, Lessors and Lessee have caused this Amendment to be executed and to be effective on the day and year first above written.

LESSORS:

ATTEST:

Secretary

UNITED PARK CITY MINES COMPANY

By President

ATTEST:

Cindy L. Laurtis
Secretary

NORANDA MINING INC.

By R. J. Fiorini
Richard J. Fiorini,
Vice President and General Manager

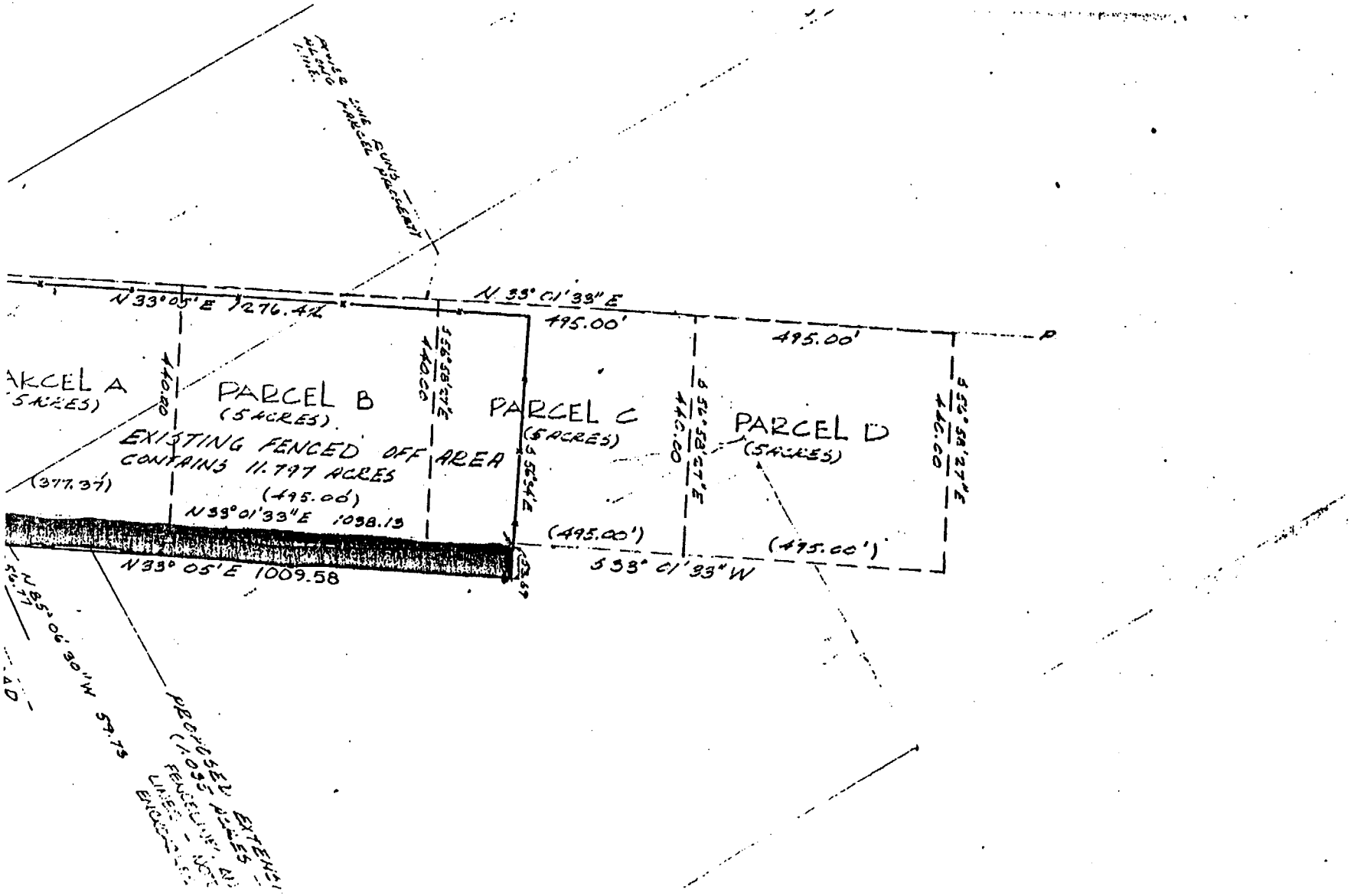
LESSEE:

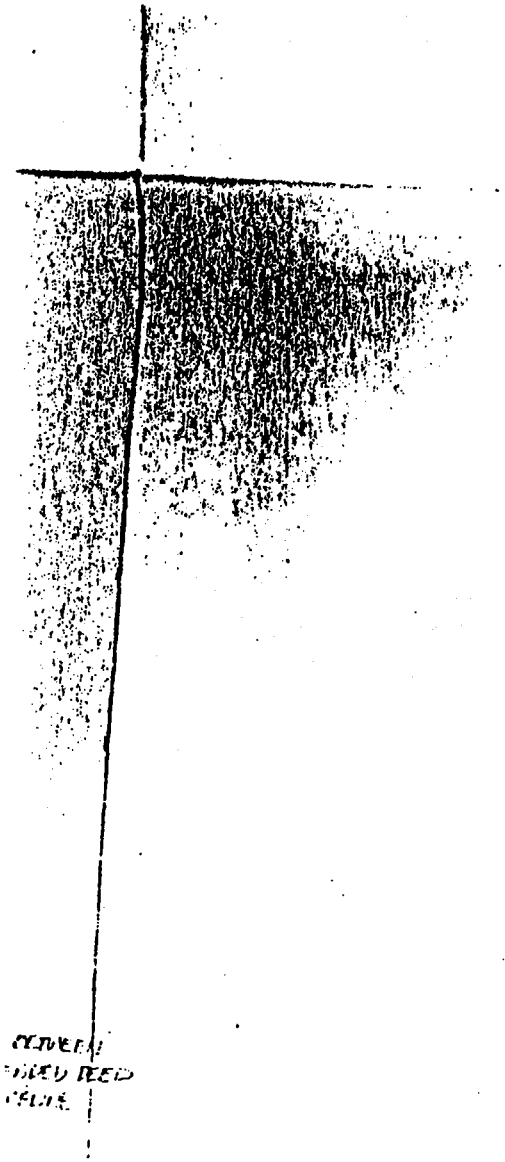
ATTEST:

M R Olson
City Recorder

PARK CITY MUNICIPAL CORPORATION

By John C. Green
John Green, Mayor


N 33° 01' 33" E
495.00'
495.00'
N 33° 05' E 1276.42
440.00
PARCEL A
(5 ACRES)
PARCEL B
(5 ACRES)
PARCEL C
(5 ACRES)
PARCEL D
(5 ACRES)
EXISTING FENCED OFF AREA
CONTAINS 11.797 ACRES
(377.37')
(495.00')
N 33° 01' 33" E 1038.13
(495.00')
(495.00')
N 33° 05' E 1009.58
S 33° 01' 33" W
N 85° 06' 30" W 59.79
PROPOSED EXTENSION



PROPOSED EXTENSION OF SANITARY LAND FILL

Beginning on the North right of way line of a County Road at a point S. 89°30'01"W. alor the section line 2077.02 feet and South 3276.82 feet from the Northeast corner of Section 2, T. 2 S., R. 4 E., S. L. B. & M. and running thence N. 33°01'33" E. 1038.13 feet to a fence; thence S. 56°34' E. along said fence and the extension there of 53.69 feet; thence S. 33°05' 1009.58 feet to the North right of way line of said county road; thence N. 85°06'30" W. along said North line 59.73 feet to the point of beginning. Contains 1.250 acres.

NOTE: THIS DESCRIPTION COVERS THE PROPOSED EXTENSION FROM THE EXISTING FENCE LINE AND COUNTY ROAD R.O.W. LINE. RATHER THAN EXISTING STATE LINES.

UTAH STATE DEPARTMENT OF HEALTH

DIVISION OF ENVIRONMENTAL HEALTH

CODE OF
SOLID WASTE DISPOSAL REGULATIONS

Adopted by
Utah Solid and Hazardous Wastes Committee
Under Authority of
26-14, U.C.A., 1953, As Amended,
June 20, 1981

FOREWORD

These regulations are for the purpose of establishing minimum requirements for the disposal of solid wastes in Utah. The term "solid wastes" means garbage, trash and other wastes generated by daily living processes and also includes those produced in commercial, industrial and agricultural operations.

The growing volume of these wastes and the often haphazard methods of getting rid of them have resulted in rapid multiplication of the associated problems through the years, until it became obvious in Utah, as across the nation, that a positive management program would be essential.

Open dumping and intermittent burning of solid wastes, particularly those of municipal origin, has been the pattern in the past, leading to the increasingly undesirable effects of fly and rodent breeding, air pollution, water pollution, and aesthetic blight. This undesirable method of disposal has resulted partly from lack of specific controls and partly because of a relatively low cost.

While it is acknowledged that compliance with these regulations will result in added expense to local government and others involved, it is considered essential to proceed without delay in correcting the obvious problems which now exist in many areas of the State. An added benefit will be the opportunity of conserving the nations natural resources through recycling of useable materials.

The regulations are based on Statutory Authority and responsibility conferred by Section 26-14, UCA, 1953, as amended, and are enforceable throughout the State. They are designed for adoption and enforcement by local health departments in cooperation with the State Department of Health.

In adopting these regulations, the Solid and Hazardous Wastes Committee acknowledges a need for time to bring existing facilities up to standard and has instructed the staff to work cooperatively in development of reasonable construction schedules, with limits which asssure elimination of existing hazards and environmental blights without undue delay, but which also recognize the difficulties faced by local governments in raising funds and developing regional solutions to problems.

CODE OF SOLID WASTE DISPOSAL REGULATIONS

DEFINITIONS

The following definitions shall apply in the interpretation and enforcement of this code.

Committee means the Utah Solid and Hazardous Wastes Committee.

Department means the Utah State Department of Health.

Hazardous Wastes means all waste materials considered to be excessively toxic or poisonous, corrosive, irritating or sensitizing, radioactive, biologically infectious, explosive or flammable, or other materials as determined by the Committee.

Person includes bodies politic and corporate, partnerships, associations and companies.

Shall is used to indicate mandatory requirements.

Solid Wastes includes hazardous wastes and means any discarded organic matter, garbage, refuse, trash, and other solid materials resulting from industrial, commercial, recreational and agricultural operations and from community activities, and shall include liquid or semi-liquid wastes accumulated in vehicle waste tanks or transported by tank truck or other similar means.

INDISCRIMINATE DUMPING

1. It shall be unlawful for any person to deposit any solid waste in any place except at a site which has been designated by a city, county, district or other properly designated agency, and approved by the Utah State Department of Health. This requirement does not include the deposition of inert construction debris used as fill material or mine tailings and overburden, provided such deposition does not cause a public nuisance or hazard or contribute to air or water pollution.

APPROVAL REQUIRED

2. No solid waste disposal site shall be constructed or operated without the approval of the Department.

SUBMISSION OF PLANS

3. Design plans and related information shall be submitted to the Department for review and approval prior to the construction of any solid waste disposal site. Such plans shall include the following:

(a) A plat, map or aerial photograph upon which is accurately shown the exact location of the proposed disposal site, current land use, zoning within 1/4 mile of the site, any homes, industrial buildings, wells, watercourses, surface drainage channels, rock outcroppings, roads and general topography.

(b) A report including the following details:

(1) Population and area to be served by the proposed site.

(2) Total area of the proposed site.

(3) Special provisions for handling special and/or hazardous wastes.

(4) Anticipated type, quantity and source of solid waste to be deposited in the site.

(5) Soil description to a depth of at least five feet below the proposed excavations, maximum groundwater elevations throughout the site and a general description of geology of the area. Such data shall be obtained by soil borings, trenching or other appropriate means.

(6) Availability, source and characteristics of cover material.

(7) Type and availability of equipment for efficient excavating, earth moving, spreading, compaction and other needs.

(8) Provisions for fire control, which may include arrangements made with the nearest fire department to control any fires which may occur at the site.

(9) Evidence of year-round accessibility to the site, to include an all-weather road.

(10) Proposed fencing for control of access as well as prevention of scattering of waste material by wind.

(11) Evidence of land ownership or lease agreement.

(12) Any other information specifically requested by the Department.

PLAN APPROVAL

4. Upon approval of the plans and supporting information, persons concerned will be notified in writing by the Department. Approval will include appropriate limitations on types of waste to be accepted. Construction shall not be started prior to receipt of the written approval.

5. Plan approval will depend, in part, upon adequate isolation, avoidance of excessively irregular topography, groundwater elevations, extremely pervious soil formations, surface rock formations and outcroppings, and close proximity to natural drainage channels. At least five feet of separation between the bottom of disposal trenches and the highest groundwater elevation is desireable. Exceptions to this rule will be considered on individual merit but only where the site can be so modified as to demonstrably preclude any wetting of deposited waste by groundwater.

SITE OPERATION

6. Each disposal site shall be operated as follows:

(a) At least six inches of earth shall be placed after each operating day over all waste material after compaction to the smallest practical volume. A minimum of two feet of earth shall be placed over any completed segment of the site. Final grading shall provide effective surface drainage.

(b) The working face shall be limited to the smallest area practical to confine the amount of exposed waste without interfering with effective operation procedure.

(c) Adequate equipment for trenching, compacting and covering shall be available and in operating condition.

(d) Qualified personnel shall be at the site to supervise activities during all hours of scheduled operation.

(e) Open burning shall not be permitted.

(f) Adequate fire protection shall be provided. This may include arrangements made with the nearest fire department to control any fires which may occur at the site.

(g) Litter control along access roads and at the site shall be accomplished by clean-up of the areas as often as necessary to prevent unsightly conditions caused by blowing paper and other misplaced refuse.

(h) Provisions for dust control at the site and along access roads shall be implemented as necessary.

(i) The supervisor or other appropriate person shall keep records of the amounts of solid wastes accepted. This may be done by estimating area filled at the site, by measuring the volume of waste deposited, or by weighing material brought to the site. The amount and location of area completed shall be recorded and kept on file.

(j) Appropriate rodent and insect control procedures shall be implemented as necessary.

HAZARDOUS AND SPECIAL WASTES

7. If hazardous or special wastes are accepted at the site, proper provisions shall be made for handling them. These provisions shall include, where necessary, a separate area for disposal of the wastes, designated by appropriate signs.

8. Hazardous wastes shall be covered immediately after dumping in the designated area, with minimum of six inches of cover material to avoid danger to persons permitted in the area.

9. Certain bulky wastes, such as automobile bodies, furniture and appliances should be crushed and then pushed onto the working face near the bottom of the cell or into a separate disposal area. Other bulky items, such as demolition and construction debris, tree trunks or stumps and large timbers, should be pushed onto the working face near the bottom of the cell or into a separate disposal area.

10. Dead animals received at the site should be deposited onto the working face at or near the bottom of the cell with other solid wastes, or into a separate disposal area provided they are covered immediately with six inches of earth to prevent odors and the propagation and harborage of rodents and insects.

11. Water treatment plant and digested wastewater treatment plant sludges containing no free moisture should be placed on the working face and covered with municipal solid wastes.

PHASING OUT OPEN DUMPS

12. Abandoned open dumps shall be closed in accordance with the following requirements:

(a) Absence of rats and other vermin shall be positively established. When rats or other vermin are present, an extermination procedure shall be established and

(b) All fires shall be extinguished before final cover of earth is applied.

(c) All solid waste shall be consolidated, compacted and covered with at least two feet of suitable cover material.

(d) The final grading shall be accomplished to provide proper surface drainage and to avoid ponding.

(e) If feasible, the area should be planted with grass or other vegetation.

OTHER PROCESSES, METHODS, AND EQUIPMENT

13. Processes, methods, and equipment other than those specifically addressed in this Code will be considered on an individual basis by the Department of Health upon submission of evidence of adequacy to meet environmental quality criteria.

EXCLUSIONS

14. Solid waste disposal facilities which are required to comply with State or Federal hazardous waste management regulations are exempt from provisions of these regulations.

EXHIBIT 15-L

UNITED PARK CITY MINES COMPANY
309 KEARNS BUILDING
SALT LAKE CITY, UTAH 84101

June 11, 1985

To: E. L. Osika, Jr.
From: Kerry C. Gee
Subject: Reclamation of the Park City Landfill

At this time, daily operations of the Park City Landfill are being conducted by the Park City Municipal Corporation. They are currently operating with several violations of the original and amended leases dated 1973 and 1981. The major violations consist of filling over the maximum height requirement of 3 feet above the surrounding terrain and expanding the limits of the dump beyond the described boundary of the leased property.

Unless the Landfill site is brought into compliance with the original and amended leases, United Park City Mines Company will suffer irrepairable damage and should be compensated. If the condition of the Landfill were to comply with the original agreements, the City would get the title to the property. However, it appears that by complying with the agreements a great deal of excess fill and trash would be generated. This would have to be disposed of elsewhere at great cost to the City. It would also take a great deal of time. Recent descussions with City personnel have indicated that they do not want to operate a landfill any longer and would like to abandon it as soon as possible. It may be in the best interest of United Park to terminate the original and amended agreements with the City and force them to perform certain short and long term reclamation duties as described by us. As compensation, United Park would receive title to the property and not have the responsibility for any long term environmental liabilities that may result from the Landfill.

Whatever course of action United Park takes, there is a great deal of reclamation that needs to be done (see Plate 1-A). In order to bring the Landfill operation and site into compliance with the original and amended lease two things must be done (1) All of the material deposited on property adjacent to the Landfill should be removed. This includes material along the western and eastern boundaries of the Landfill, material deposited along the Landfill

access roads and the asphalt and concrete slabs located along the gravel pit access road west of the Landfill. In addition, a great deal of material has been disposed of at a variety of locations in and around the greater Richardson Flat area. This material was deposited only as a result of the Landfills existence and should be cleaned-up as part of the Landfill reclamation. (2) All of the material in the Landfill deposited at an elevation 3 feet above the surrounding terrain should be removed. The surface of the landfill should be graded to establish adequate drainage and then covered with two feet of topsoil as per the original agreement. The final elevation of the Landfill should not be over 3 feet above the surrounding terrain. All of the automobiles, trucks and buses would have to be removed from the area. Due to the existence of the Landfill, people have from time to time, disposed of material in any convenient location in the Richardson Flat area. An ordinance should be established and agreed upon by County and City governments that would strictly regulate and enforce indescriminate dumping in the area after the closure of the Landfill.

Should United Park decide to terminate the agreements and take posession of the property, certain reclamation duties would have to be performed by the City as part of the agreement. The fill dirt deposited on the southeastern boundary of the extension would have to be removed and deposited within the boundaries of the landfill. The piles of asphalt and concrete slabs located along the gravel pit access road would have to be removed. A likely spot for this material exists on the property adjacent to the northwestern boundary of Parcel B. This material could be used to fill an old gravelpit that exists in this area. The cars, busses and other large debris would have to be removed from the property and disposed of elsewhere. Contouring of the surface of the Landfill would have to be done to establish drainage. A two foot thick layer of topsoil would have to be put on the surface of the Landfill and seeded to prevent erosion. Material that has been indiscriminately dumped and scattered around the Richardson Flat area as a result of the Landfill would have to be cleaned up. As with the complete Reclamation Agreement, a City-County policy regarding indicriminate dumping in the Richardson Flat area would have to be established and enforced once the Landfill is closed.

Current disposal operations are underway in Parcels C and D (see Plate 1-A). The groundwater table in this area is higher than the City's plan originally stated. In an effort to avoid contamination of our groundwater monitoring wells, located North of the Landfill, the City is not digging trenches and burying material beneath the surface of the ground. The City's current practice is to dispose of the material on the surface of the ground by stacking and compacting the debris to a thickness of 3 to 4 feet; then, burying it with 1 to 2 feet of earth. When a large area has been completed in this manner, a new layer or lift will be developed. The City's plan is to raise the portions of Parcel C and D to a height equal to Parcels A and B. This procedure allows the City to keep refuse out of the groundwater but greatly limits the amount of material that can be deposited at the Landfill. It also forces the City into noncompliance with Section 5 of the original lease.

The City has an arrangement with Summit County to accept household refuse from Park City at the County dump in Henefer, Utah. The City is only accepting construction debris and fill dirt at the Park City Landfill. At the rate at which material (particularly fill dirt) is currently flowing into the Landfill, the raising of Parcels C and D will be complete by the end of July. In view of this, I would expect that reclamation work could be completed before winter.

During any reclamation work, it will be imperative that a representative from United Park City Mines Company visit the Landfill on a regualar basis to monitor the work performance. This will also ensure against any further degradation of the surrounding United Park property by the removal of valuable materials, such as topsoil, without due compensation, for the sole purpose of reclaiming the dump.

cc: R. V. Clawson

EPA REGION VIII
SUPERFUND DOCUMENT MANAGEMENT SYSTEM

DOC ID # 73116
PAGE # _____

IMAGERY COVER SHEET
UNSCANNABLE ITEM

Contact the Superfund Records Center to view this document.

SITE NAME Richardson Flats

OPERABLE UNIT _____

REPORT OR DOCUMENT TITLE US EPA's Request For Information

DATE OF DOCUMENT November 23, 1987

DESCRIPTION OF IMAGERY Plate 1A Reclamation Map - Oversized

NUMBER AND TYPE OF IMAGERY ITEM(S) 1

EXHIBIT 15-M

UNITED PARK CITY MINES COMPANY
309 KEARNS BUILDING
SALT LAKE CITY, UTAH 84101

July 10, 1985

MEMORANDUM

To: E. L. Osika, Jr.

From: Kerry C. Gee

Subject: Prospector Square Mill Tailings Disposal in the Park City Landfill.

Attached is a memo to you written on July 3 describing my observations during the period from June 28 to June 30, 1985. During this period of time, I observed and sampled tailings-like material being disposed of in the Park City Landfill. Also, attached are the results of the samples taken and analysed for Pb., Zn., Cu. and Cd.

In summary, the values for Pb. were between 3,000 and 7,800 ppm, Zn. values were between 5,500 and 14,400 ppm, Cu. values were between 260 and 760 ppm and Cd. values were between 32 and 72 ppm.

The samples average 5620 ppm Pb., 10,320 ppm Zn, 451 ppm Cu. and 54 ppm Cd. The material that I observed being loaded, hauled and dumped went 4,400 ppm Pb., 9,000 ppm Zn., 300 ppm Cu. and 40 ppm Cd.

cc: Reed V. Clawson

UNITED PARK CITY MINES COMPANY
309 KEARNS BUILDING
SALT LAKE CITY, UTAH 84101

July 3, 1985

To: E. L. Osika, Jr.

From: Kerry C. Gee

Subject: Disposal of Material from the Prospector Square Area in the Park City Landfill.

SUMMARY

On Friday, June 28 and Sunday, June 30, 1985, I observed material from Prospector Square being loaded into trucks, hauled to and dumped in the Park City Landfill. The material consisted of a mixture of grey sand-like material, soil, rocks, concrete slabs and other debris. The grey sand-like material comprised between 40 and 60 percent of the material hauled and sampled and appeared to me to be old mill tailings. Samples were taken from several piles of material that I did not observe being dumped. Samples were also taken of material that I observed being loaded into trucks at Prospector Square, hauled to the Landfill and dumped. Photographs were taken of the loading and dumping. This was also observed by a Summit County Deputy Sheriff and others.

After first observing material that appeared to me to contain old tailings was being disposed of in the Park City Landfill, I informed you and then the Director of Public Works for Park City, Mr. Jerry Gibbs.

The samples have been taken to Assay Lab, Inc. in Midvale where they will be dried and crushed. They will then go the ASARCO Labs in Salt Lake for analysis on Cu., Pb., Zn. and Cd. content.

The following paragraphs describe in detail the events that are related to the hauling of material from Prospector Square and dumping it in the Landfill.

Thrusday, June 27, 1985

I was first informed that "tailings" were being hauled from Prospector Square to the Landfill on Thursday evening.

Mr. Ray Wortley, who had observed this earlier in the day, took me to Prospector Square and showed me specific sites from which material had been removed. I visited the Landfill and observed several piles of fill that contained material resembling old mill tailings.

Friday, June 28, 1985

I went to the Landfill at 8:15 A.M. and sampled material from 10 piles that Mr. Wortley claimed to have originated in Prospector Square (sample nos. LF-11 and LF-12). While I was there, a dump truck with Park City Municipal Corporations emblem on the doors arrived with a load of Material that the driver claimed was from Prospector Square. This was witnessed by Bob Thomasen, Ray Wortley and Don Petty, a City employee.

I drove from the Landfill to Prospector Square and observed a white dump truck being loaded with material from a lot on Sunrise Circle. The material contained grey sand-like material that resembled tailings. I followed the truck to the Landfill. I then went to the office of Public Works in Park City and telephoned you to report my observations. I then informed the Director of Public Works, Mr. Jerry Gibbs. Mr Gibbs told me that the material was not tailings, just dirt but that he would look into it and get back to me.

I recieved a message on Monday, July 1, that was taken in our office the previous Friday, from Mr. Gibbs stating that the material was not tailings but concrete slabs and dirt and that I was wrong in my observations.

Saturday, June 29, 1985

Mr. Ray Wortley found me at my residence at approximately 9:45 A.M. and informed me that the contractors in Prospector Square had hauled tailings to the Landfill all day on Friday. I passed this information on to you in a telephone conversation. You instructed me to take samples when I could over the weekend.

4:10 P.M. Saturday, June 29, 1985

Mr. Wortley found me in Park City and informed me that contractors had hauled material with tailings in it from Prospector Square to the Landfill all day on Saturday. We went to Prospector square and Mr. Wortley showed me specific sites from which material had been removed. I would sample these areas on Sunday.

Sunday, June 30, 1985, 11:20 A.M.

I proceeded to a vacant lot ot the corner of Butch Cassidy Court and Wyatt Earp Way. Material consisting of a mixture of soil and a grey sand-like material was pushed into piles and had the appearance that it was ready to be hauled away. I took three samples of the Material from this lot (sample numbers BC-WE 1, 2, and 3).

11:45 A.M.

I went to Sunrise Circle to sample residual material that remained after hauling observed on Friday, June 28, 1985. I took two samples of this material (samples SR-1 and SR-2). While traveling from the lot on Butch Cassidy Court to Sunrise Circle, I passed a lot on the corner of Ina Way and Comstock Drive. This lot had two backhoes with operators on it. The backhoes had Parry Construction emblems on them. It appeared to me that the operators were waiting for a truck. After sampling the lot on Sunrise Circle, I observed a large blue dumptruck with "Bill Dudley Trucking" on each door back onto to lot and park next to the backhoes. The truck driver and the backhoe operators got into smaller trucks and drove away. The time was approximately 12:10 P.M.

I drove to the City Landfill. The gates were unlocked and opened wide. I went into the dump and drove to the northernmost end of the dump and observed several piles of material that had a grey colored sand-like material mixed with the soil and other debris. I would sample these later.

At this point in time, I felt certain that more material was going to be hauled to the dump from Prospector Square area. I felt that an impartial observer would help sustantiate any claims to that effect. I traveled to Mt. Air Cafe and telephoned Joseph L. Offret, a Deputy Sheriff in Summit County. Mr. Offret was off duty but agreed to come and observe for me. He recommended that I get a camera and take some pictures. I arrived back to Ina Ave. at approximately 12:45 P.M.

12:45 - 1:05 P.M.

I sampled the material pile up on the lot. Sample Numbers Ina 1 and 2. Mr. Ray Dudley and the others returned to the lot along with a white dump truck with a "Parry Constrution" emblem on the door. At approximately 1:10 P.M., Mr. Dudley moved the truck with his name on it to a

lot just north of the house located at 2223 Doc Holiday Drive. He was accompanied by one of the backhoes. The backhoe began loading material into Mr. Dudley's truck. At approximately 1:15 P.M., Mr. Offret arrived and was accompanied by his father, Lloyd Offeret. Also, another piece of equipment a "Bobcat" arrived and with the other backhoe began smoothing and contouring the Ina Ave. Lot.

1:50 P.M.

Mr. Dudley's truck was full of material and drove off the lot headed towards the main highway. Joe and Lloyd Offret and I followed him. The dumptruck turned east of the main highway towards the Landfill where he had to unlock the gates to gain access. He then proceeded to the northern end of the Landfill, dumped his material with the other piles observed earlier and drove off. The time was 2:00 P.M.

I sampled the material dumped by Mr. Dudley (sample number Dumped 1) and the other piles observed earlier (samples LF1 thorugh LF10).

At approximately 2:50 P.M., Mr. Dudley returned with his truck loaded and dumped it. In addition, the white dump truck observed on Ina Ave. arrived with a load and dumped its material. I sampled both loads of material (samples Dumped 2 and Dumped 3).

The Offrets and I left the Landfill site at approximately 3:30 P.M. While leaving we notice both dump trucks returning to the Landill site loaded with tree limbs and other debris. It appeared that these last two observed loads had little or no grey sand-like material in them.

AMERICAN
ENVIRONMENTAL
CONSULTANTS

July 8, 1985

Mr. Joe McPhie
United Park City Mines
P. O. Box 1450
Park City, Utah 84060

Dear Sir:

Please find attached the results for the soil samples submitted for lead, zinc, copper and cadmium analyses. All results are listed as total on a dry weight basis. Also, for comparative purposes, I have included some information on lead and cadmium levels in various types of soils.

Very truly yours,

Gary R. Stanga
Chief Environmental Chemist

GRS/mcs
Attach.

004019

3422 South 700 West Salt Lake City, Utah 84119 (801) 262-7946

American Environmental Consultants
Division of ASARCO Incorporated
Salt Lake City, Utah

COMPANY United Park City Mines
Soil & Vegetation Sample Results

DATE RECEIVED 7/ 2/85
DATE REPORTED 7/ 8/85

LAB #	SAMPLE DESCRIPTION	1985 SAMPLE DATE	Cd ppm	Cu ppm	Pb ppm	Zn ppm
931	Soil LF 1	7/ 2	40.	320.	3700.	7800.
932	Soil LF 2	7/ 2	60.	500.	7000.	11500.
933	Soil LF 3	7/ 2	72.	520.	7100.	13200.
934	Soil LF 4	7/ 2	54.	440.	5800.	10400.
935	Soil LF 5	7/ 2	46.	380.	5650.	9200.
936	Soil LF 6	7/ 2	70.	760.	7800.	14400.
937	Soil LF 7	7/ 2	40.	340.	4400.	7200.
938	Soil LF 8	7/ 2	42.	460.	5140.	8000.
939	Soil LF 9	7/ 2	60.	520.	5660.	11320.
940	Soil LF10	7/ 2	32.	260.	3000.	5500.
941	Soil LF11	7/ 2	68.	560.	6900.	12200.
942	Soil LF12	7/ 2	54.	500.	5860.	11200.
943	Soil BC WE 1	7/ 2	42.	380.	4640.	9000.
944	Soil BC WE 2	7/ 2	66.	580.	7540.	12600.
945	Soil BC WE 3	7/ 2	50.	420.	5600.	10200.
946	Soil INA 1	7/ 2	64.	380.	4940.	12600.
947	Soil INA 2	7/ 2	54.	460.	5220.	11200.
948	Soil Dumped 1	7/ 2	40.	300.	4400.	9000.
949	Soil Dumped 2	7/ 2	54.	440.	5200.	10800.
950	Soil Dumped 3	7/ 2	62.	560.	6200.	12000.
951	Soil SR 1	7/ 2	56.	420.	5440.	10600.
952	Soil SR 2	7/ 2	58.	420.	6450.	11400.

COMPARISON OF METAL CONCENTRATIONS IN SOIL

Pb [1]	1.	Natural Range	2 - 200 ppm
	2.	Street Dust, Residential and Commercial Sites	1636 - 2413 ppm
	3.	City Parks	194 - 3357 ppm
Cd [2]	1.	Normal Soils	0.1 - 1.4 ppm
	2.	1 km from lead smelter	26. - 160. ppm

(1) Lead Airborne Lead in Perspective (NAS), pp. 28-30, 1972

(2) U.S. Department of Commerce - Health Assessment Document for Cadmium, pp. 4-16

EPA REGION VIII
SUPERFUND DOCUMENT MANAGEMENT SYSTEM

DOC ID #_____
PAGE #_____

IMAGERY COVER SHEET
UNSCANNABLE ITEM

Contact the Superfund Records Center to view this document.

SITE NAME Richardson Flats

OPERABLE UNIT _____

REPORT OR DOCUMENT TITLE Response of United Park City...

DATE OF DOCUMENT January 15, 1988

DESCRIPTION OF IMAGERY Exhibit 15N - oversized topographic map

NUMBER AND TYPE OF IMAGERY ITEM(S) 1

EXHIBIT 15-O

UNITED PARK CITY MINES COMPANY
309 KEARNS BUILDING
SALT LAKE CITY, UTAH 84101

October 9, 1985

MEMORANDUM

To: E. L. Osika, Jr.
From: Kerry C. Gee

Subject: Surface and Groundwater Monitoring Program Around the Park City Landfill.

As part of the reclamation of the Park City Landfill, Park City Municipal Corporation should be required to drill four downgradient wells and one upgradient well around the Landfill site. These wells should be sampled monthly and analyzed for the parameters listed below.

1. pH
2. Chloride
3. Iron
4. Manganese
5. Phenols
6. Sodium
7. Sulfate
8. Lead
9. Zinc
10. Mercury
11. Arsenic
12. Copper
13. Cadmium
14. Specific Conductance
15. Total Organic Carbon
16. Total Organic Halogen

The establishment of an upward trend of the amount of any parameter listed above, particularly in the downgradient wells, would be a good indication that a problem exists. It would then be necessary to do further analysis to determine the exact contaminates involved and the possible affects.

It would not be possible to establish the true background at each well location because there may already be some migration of contaminants from the Landfill into the

ground and surface water system. Therefore, the upgradient well will have to be used to establish background for the area. In addition to the groundwater sampling wells, surface water samples should be taken both up and downstream from the Landfill.

It is very important to United Park that these wells are drilled and the monitoring program established. We are currently monitoring ground and surface waters around the impoundment dam at the tailings pond. It appears that Silver Creek, located west of the Landfill, contains tailings that have their origin in Prospector Square and a slurry line break that occurred while Noranda was operating the Ontario Mill. Should surface or ground waters penetrate the Landfill cells, it is probable that certain organic compounds formed as the refuse decomposes could enter the groundwater system. Should these compounds find their way to the tailings, they may be very capable of leaching and mobilizing the metals. This would result in the contamination of the surface and groundwater that we are currently monitoring with regards to our tailings pond. Should this happen, United Park would have to prove that the contamination was not coming from our tailings pond. The wells would aid in that proof.

The location of the wells is very important. I recommend that four downgradient wells be drilled. One of these wells should be between the Landfill and the general area of our underground monitoring wells. The other three wells should be located in such a manner that if some contamination was discovered, its rate of movement could be determined. That is, they should not all be equidistant from the northwestern edge of the Landfill. I also recommend that when the City is ready to establish the wells and monitoring program that an independant and qualified hydrogeologist experienced in these matters be contracted to design the monitoring program with respect to well locations, depths, size and the types of materials to be used in the wells. When dealing with organic compounds, the types of materials placed in the wells are very critical. Wells designed to monitor organic compounds have been contaminated and rendered useless because of the types of glues or compositions of the well casings used. This independant consultant will work closely with City and United Park personnel. American Environmental Consultants (ASARCO) recommends that we contact Hydro Search Inc. in Denver, Colorado.

cc: Reed V. Clawson
Rosemary J. Beless

EXHIBIT 15-P

UNITED PARK CITY MINES COMPANY

309 KEARNS BUILDING
SALT LAKE CITY, UTAH 84101

December 22, 1985

Mr. Jerry W. Gibbs
Director of Public Works
Park City Municipal Corporation
P.O. Box 1480
Park City, Utah 84060

Re: Closure of Park City Landfill

Dear Mr. Gibbs:

This will serve to acknowledge our receipt of the October 23, 1985 letter regarding a proposal for closure of the Park City Municipal Landfill in Richardson Flat.

As you have recognized, Park City Municipal Corporation (the "City") is required to do certain things at the site as a precondition to the releasing of the landfill property back to United Park City Mines Company ("UPCM") under the terms of the Lease dated October 12, 1973 by and between UPCM, as Landlord, and the City, as Tenant. We are concerned that the City's proposal does not address issues raised by UPCM representatives in previous discussions with the City and does not adequately respond to the specific requirements of the Lease. This is particularly disturbing in light of the Environmental Protection Agency's current scrutiny of the Park City area and the City's position with the E.P.A.

As we have previously informed you, the City is in violation of a number of provisions of the Lease and the First Amendment to the Lease, dated August 1, 1981. These violations include, but are not limited to: (1) disposing of substances at the landfill other than City garbage and waste without written consent of UPC (Lease, Paragraph 1); (2) failure to perform final cleanup of the prior parcel of land (Parcels A-C) before utilizing the subsequent parcel [(Parcels B-D) (Lease, Paragraph 2(a)-(f); First Amendment, Paragraph 3)]; (3) failure to maintain the landfill as a safe, sanitary, inoffensive site (Lease, Paragraph 3); (4) failure to operate the landfill in compliance with federal and state statutes, regulations and rules (Lease, Paragraph 4); (5) filling the landfill above the Lease limitation of three feet above the natural terrain to heights exceeding fifteen feet above the natural terrain (Lease Paragraph 5; First

Amendment, Paragraph 3); (6) failure to bury or remove all loose material, to compact the entire surface to not less than 90% maximum density and to cover the entire surface with a layer of top soil not less than two feet thick (Lease, Paragraph 6; First Amendment, Paragraph 3); (7) failure to enclose the landfill area in possession of the City with a six-foot chain link fence (Lease, Paragraph 7); (8) using the extension landfill area for a new fill rather than to level the present fill in the leased area (First Amendment, Paragraph 3); (9) failure to complete all levelling and cleanup of the extension area within 90 days after August 1, 1981 [(First Amendment, Paragraph 4(a)]; and (10) failure to police and maintain a 400-foot perimeter around the leased area and to promptly collect and properly dispose of any refuse within the area [(First Amendment, Paragraph 4(c)]. In addition, the City has allowed waste material to be dumped beyond the boundaries of the leased areas onto various properties not leased to the City.

UPCM is also informed that there is a possibility that the City has dumped, and/or has allowed others to dump, hazardous substances, as defined under 42 U.S.C. § 9601(14) [Comprehensive Environmental Response, Compensation and Liability Act of 1980, § 101(14)] in the landfill and that the City may be in violation of 42 U.S.C. § 9603(b) for failure to give notice of this dumping. UPCM has affidavits of parties who claim to have witnessed such dumping.

These actions of the City are in violation of the Lease and have damaged the landfill property and surrounding properties owned by UPCM.

In order to effectively close the landfill and enter into an appropriate Closure Agreement, it is necessary that corrective action be taken by the City to put the property back in the condition it would have been (to the extent possible) had the Lease terms been fully complied with. Furthermore, it is necessary that full and complete assurrances are given to the satisfaction of UPCM that all federal, state and local health, safety, environmental and other applicable regulations and requirements have been met and complied with, that appropriate monitoring and corrective action has been taken and implemented by the City, and that adequate indemnification arrangements have been made to protect UPCM against future potential liability. The terms of a Closure Agreement would generally include the following:

1. The City is to remove approximately 12 - 15 feet of waste so that the fill does not exceed the three-foot limitation required in the Lease. Cars, busses, and other large debris are to be removed from the property and disposed of elsewhere. The entire

landfill surface must then be compacted to not less than 90% of the maximum density. The landfill area must also be capped and contoured, with appropriate drainage, top soil of not less than two feet thick and planting to prevent erosion.

2. Because the City has violated various provisions of the Lease and exposed UPCM to potential liability, UPCM will not be required to quitclaim Parcel A to the City [Lease Paragraph 2(e)].

3. The landfill area must be enclosed with a six-foot chain link fence with locked gates (Lease, Paragraph 7).

4. Waste materials dumped beyond the boundaries of the leased areas on adjoining properties must be removed. Specifically, the fill dirt deposited on the southeastern boundary of the extension lease, the piles of asphalt and concrete slabs located along the gravel pit access road and material indiscriminately dumped around the Richardson Flat area as the result of the landfill must be removed.

5. City-county policies and ordinances banning dumping in the Richardson Flat area must be enacted and enforced.

6. The City shall submit to UPCM a complete inventory of the wastes deposited at the landfill, as required by Paragraph 6(i) of the Utah Solid Waste Disposal Regulations (June 20, 1981). This inventory must detail the types of wastes deposited in each cell or trench within the landfill and the locations, depths, and dimensions of landfill cells, trenches or other disposal areas with reference to permanently surveyed benchmarks.

7. Under the supervision of an independent, qualified environmental hydrogeologist, to be agreed upon the by the City and UPCM, the City will construct monitoring wells above and below the landfill site for the purpose of sampling and analyzing the chemical composition of the groundwater and to monitor future compliance with groundwater protection standards. A monitoring program for the City to follow will be established jointly by the environmental hydrologist, UPCM technical personnel, and the City.

8. The City will indemnify, defend and hold UPCM harmless from any and all claims, demands or causes of action, of whatever nature, by any federal, state or local government agency or private party, arising from damages or injury caused by or related to the landfill or for reclamation, corrective and cleanup costs resulting from or related to the landfill. The City shall also pay all costs incurred by UPCM, including but not limited to, expert consultants' fees, testing costs, court costs and attorneys' fees, associated with any investigation or action concerning the landfill.

9. The City shall provide post-closure financial assurances in favor of UPCM in the form of a bond, trust fund or post-closure insurance, for post-closure monitoring and maintenance of the landfill site and for the costs of any future investigations, corrective actions or reclamation for the landfill material which may be required by the federal, state or local government, or a private party. The coverage of a post-closure insurance policy shall be in an amount of not less than $6 million per occurence with an annual aggregate of $10 million, exclusive of legal defense costs. The minimum amount of coverage shall be adjusted annually upward or downward to reflect the change in the Consumer Price Index from the date the Closure Agreement is executed. The City will submit proof of post-closure financial assurance and the amount thereof to UPCM on an annual basis.

10. Upon completion of the closure of the landfill site and adjoining areas, the City will be required to submit to UPCM certifications by both the City and an independent registered professional engineer that the facility has been closed in accordance with the specifications of the Closure Agreement. The City will also be required to obtain written approval from the Utah State Department of Health that the landfill has been closed in accordance with state standards and regulations.

11. The City will provide UPCM with a copy of the certificate of insurance which insures the contractor hired by the City to close the landfill and which protects both the City and UPCM from liability from claims for injuries or damages arising from the contractor's activities related in any way to the closure of the landfill.

12. In the event any action is required to enforce the terms or conditions of the CLosure Agreement, the prevailing party in such action shall be entitled to recover from the other party all costs, expenses and attorneys' fees related to such action.

We look forward to meeting with you to discuss a Closure Agreement along the lines outlined above. It is of course, important that we cooperate fully with each other so as to accomplish the proper and safe closure of the landfill and to minimize any potential exposure which could possibly result in conjunction with the landfill or its closure. Please contact me to arrange a meeting at your earliest convenience.

Very truly yours,

UNITED PARK CITY MINES COMPANY

By_____
DAVID W. BERNOLFO
Its President

DWB/dsl

Response of United Park City Mines Company, 01/15/88

QUESTION 16

Please provide any information on whether United Park City Mines or its consultants are planning to perform any investigations of the soil, water (ground or surface), geology, hydrogeology or air quality on or about the site. Please include the following:

a. What the nature and scope of these investigations will be.
b. The contractors or other persons that will undertake these investigations.
c. The purpose of the investigations.
d. The dates when such investigations will take place and be completed.
e. Where on the site such investigations will take place.

RESPONSE

United Park City Mines Company, using Company personnel, is currently sampling five monitoring wells, Silver Creek and the tailings pond diversion ditch pursuant to its current NPDES Permit. In addition, continuous field observations have been taken noting areal disturbance of mill tailings, wind direction and trespasses in and about the site. These observations led to United Park City Mines Company's plan (which was commenced in 1983) to cover and revegetate areas of the tailings pond that are the source of blowing dust. Additionally, preliminary field reconnaissance commenced in March of 1987 on an investigation into the surface water distribution and drainage on all of the Richardson Flat area as well as the Site. This reconnaissance was completed in the summer of 1987 but, due to the unusually low amount of spring runoff encountered, the investigation has been extended to include the runoff period commencing in the spring of 1988. There has not been a report generated in connection with this investigation at this time.

The last investigation noted above was prompted by investigations by the Utah State Department of Health and the EPA concerning the possible listing of Richardson Flat on the National Priorities List for cleanup under Superfund.

United Park City Mines Company's investigations of and activities on Richardson Flat are currently being performed by Company personnel. Other than legal counsel, United Park

Continued on next page

City Mines Company has not hired or retained any outside consultants to study, investigate or make any reports relative to the "Site."

In connection with the realignment of U.S. Highway 40, the Utah Department of Transportation is planning to investigate the Park City Landfill on Richardson Flat with a drilling program as outlined in the attached Exhibit 16-A.

United Park City Mines Company reserves the right to supplement this response as additional information and documents become available.

UTAH DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR PREPARING PROPOSALS

INTRODUCTION

These guidelines were developed to standardize the preparation of proposals by Consultants providing services to the Department. The purpose for these guidelines is to help assure consistency in format and content of proposals that are prepared by Consultants and submitted to the Department. This process will reduce the time requirements for the Consultants in preparing a proposal and will simplify the review process by Department personnel.

The proposal shoul contain the following information in the order listed:

1. Introductory Letter
2. Personnel and Experience
3. Understanding of the Work
4. Approach to Performing the Work
5. Equipment
6. Schedule Control
7. Office Location
8. Supportive Information

It is very important that submittals be clear and concise and that they are capable of evaluation through an objective manner by the Department.

RECOMMENDED DETAILS AND EVALUATION CRITERIA

1. Introductory Letter - The introductory letter should be addressed to:

   Dale E. Peterson, P.E.
   Standards and Special Studies Engineer
   Utah Department of Transportation
   4501 South 2700 West
   Salt Lake City, UT 84119

   This letter should contain an expression of the Consultants interest in the work, a statement regarding the qualifications of the Consultant to do the work, and any summary information on the Consultant that may be useful or informative to the Department. This letter should be no longer than two pages.

2. Personnel - Identify the key individuals who are proposed to be part of the crew along with their qualifications and experience as related to the work. Experience on similar or related work should be included. Describe the crews capability for actually undertaking and performing the work. Types and locations of similar work performed in the last three years that best characterize the quality and cost control of the Consultant should be included. Names and phone numbers of individuals that

can be contacted are desired. The evaluation will consider how well the qualifications and experience of the personnel relate to the work. A three page maximum length is suggested.

3. Understanding of the Work - The Consultants basic understanding of the work. This section should be based on existing information available in the Request for Proposal, from discussions with the Department's Geotechnical Engineer, and from applicable regulations or requirements. A one page maximum length is suggested.

4. Approach to Performing the Work - Describe the course of action proposed to meet the goals and objectives of the work. The approach should be realistic, it should be clear and concise, and it should identify potential impacts, impediments, or conflicts. The estimated costs for performing the work should be included in this section. A two page maximum length is suggested.

5. Equipment - Identify the equipment proposed for use. Include types, models, and brief descriptions. A one page maximum length is suggested.

6. Schedule Control - Identify the internal methods that will be used for schedule control. Current references should be listed that confirm the Consultant's ability for the timely completion of work. A one-half page maximum length is suggested.

7. Office Location - Identify the location where the Consultant's base of operation is located. The suggested maximum length for this section is one-half page.

8. Supportive Information - Supportive information may include graphs, charts, photos, resumes, references, etc. and is totally discretionary to the Consultant. The maximum suggested length is five pages for this section.

SUMMARY

The proposal should be clear and concise and it should provide the Department's evaluators with an understanding of the Consultant's ability to undertake and complete the proposed work in a thorough and timely manner. The entire proposal including all sections listed above should not exceed 15 pages. The distribution or length of each section may vary from that suggested but it should not exceed the 15 page maximum.

REQUEST FOR PROPOSALS

for
Drilling and Soil Analysis
Services

NF-19(13)
Relocation of US-Highway 40
Park City Junction to South Mayflower

MATERIALS AND RESEARCH SECTION
UTAH DEPARTMENT OF TRANSPORTATION

October 2, 1987

REQUEST FOR PROPOSAL

Relocation of US-Highway 40
Park City to South Mayflower
NF-19(13)

PARK CITY SANITARY LANDFILL EVALUATION

I INTRODUCTION

The Utah Department of Transportation (UDOT) is currently seeking the services of a qualified drilling contractor/consultant to conduct a drilling and sampling program at the Park City sanitary landfill located in Section 2, Township 2 South, Range 4 East, SLB&M, Utah.

United Park City Mines has expressed concern that hazardous materials may be encountered within the landfill. Rosemary J. Beles, Attorney for United Park City Mines Company, on page 5 of a letter dated September 8, 1986 to Mr. Clifford I. Barrett, Regional Director, Bureau of Reclamation states: "Because Park City residents used the Park City Landfill for many years as a general "dump" for everything and Park City has refused to provide United Park with records of the materials buried at the Landfill, we do not know the contents of the Landfill. At the least, it is solid waste, with possibilities of more toxic or hazardous wastes,...".

Again, in a similar letter dated April 14, 1987, Ms. Beles states"...because the risks associated with the wastes (known sewage sludge and solid wastes; possibly toxic or hazardous wastes) in the Landfill...".

II SCOPE

Phase I - The work will consist of drilling ten exploratory holes by auger, rotary drill etc., approximately 40 feet deep with a minimum diameter of 2-15/16 inches through the sanitary landfill and five feet into the original natural ground to determine the depth of waste material in place and to recover samples to determine the type of waste in place or priority pollutants encountered. The locations are shown on the attached plan sheet and will be staked by UDOT personnel. The contractor/consultant will be required to supply UDOT with a written report which shall include a map showing the drill hole location and number, documentation indicating the depth to original natural ground and a log of the waste material encountered in each drill hole. This final report shall be submitted to the UDOT contact.

The contractor will be responsible to plug each hole with bentonite or other material approved by United Park City Mines. The type of material to be used will be stated in the proposal. In addition, the contractor shall be responsible to inform both UDOT and United Park City Mines one week prior to commencing his drilling.

Personnel Safety - Because of the concerns regarding hazardous waste the contractor will be required to drill using water as a circulation medium. The contractor shall not use any drilling technique that causes dust clouds or allows dust particulates to become airborne. The contractor shall be responsible to ensure that his employees are trained in personal hygiene. All personnel shall be required to wear gloves when handling drill equipment that encounters the soil in the landfill and when handling samples removed from the landfill.

Hazardous Waste Identification Personnel - The contractor shall have a "competent person" on site to identify non-municipal refuse if encountered. This individual shall have the training and authorization to take prompt corrective measures to ensure that the drill personnel are not exposed to potential hazards.

The above described personnel protective program has been discussed with, and reviewed by representatives of both the Utah Occupational Safety and Health office and the Federal Occupational, Safety and Health Administration.

Priority Pollutant Sampling - Core samples shall be retrieved if mine tailings or other non-municipal waste is encountered to determine if priority pollutants are present. Priority pollutants that may be encountered include, but are not limited to, lead, cyanide and arsenic.

Phase II - This work shall consist of analyzing soil samples for priority pollutants if encountered in the drilling/sampling operation. The contractor/consultant shall be required to conduct the necessary tests to determine the priority pollutants encountered and define the concentrations of these pollutants.

III - PROPOSAL CONTENTS

The proposal shall address the contractor/consultants concept of the project specfically addressing the hazardous waste problem, and his program for assuring protection of his employees. The proposal shall include a cost estimate for the required tests to determine the specific priority pollutants and determine the concentration of the pollutant.

The proposal shall conform with the Utah Department of Transportation's Guidelines for Preparing Proposals. A copy of these guidelines is attached. Proposals shall be evaluated by a Department Rating Panel and the selection made based on professional qualifications and experience, equipment, and costs.

IV CONTRACT TIME

Six copies of the proposal shall be received by Utah DOT contact, as noted below, by 4:30 PM on January 29, 1988. The final report for Phase I shall be submitted to UDOT four weeks after the notice to proceed has been received by the contractor/consultant. The date for submittal of the test results for Phase II, if applicable, will be negotiated upon completion of drilling. The contractor/consultant shall have sufficient time to complete the tests and a minimum of one week to schedule and begin testing.

V UTAH DEPARTMENT OF TRANSPORTATION CONTACT

Edward Keane, Geotechnical Engineer

4501 South 2700 West

Salt Lake City, Utah 84109

(801) 965-4320

VI UNITED PARK CITY MINES CO. CONTACT

E.L. Osika, Jr., Vice President

United Park City Mines Co.

309 Kearns Bldg.

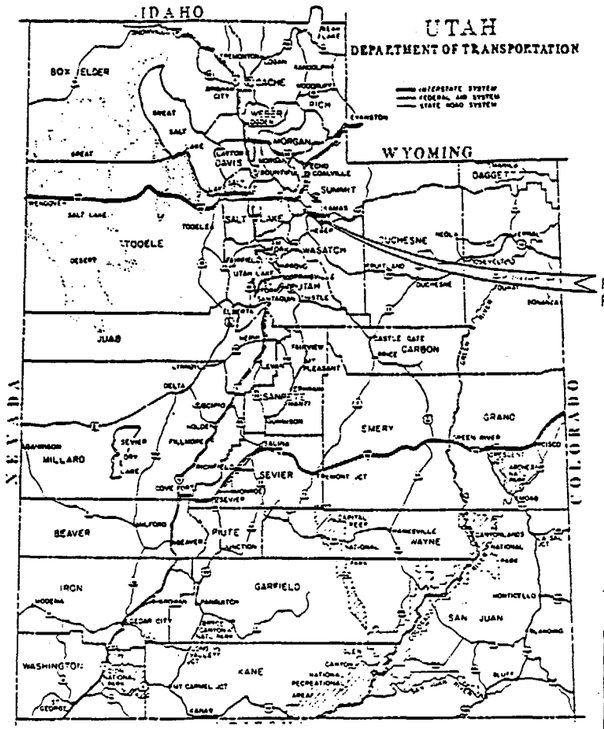
Salt Lake City, Utah 84101

(801) 532-4031

VII DISPOSITION OF PROPOSALS

Proposals become the property of the Utah Department of Transportation, are treated as privileged documents, and are disposed of according to Department policies, including the right to reject all proposals.

UTAH	PROJ. NO.	SHEET NO.
UTAH	NF-19 (13)	1



UTAH
DEPARTMENT OF TRANSPORTATION

INTERSTATE SYSTEM
FEDERAL AID SYSTEM
STATE ROAD SYSTEM

NF-19 (13)
RELOCATION OF U.S. HWY. 40
PARK CITY JCT. TO SOUTH MAYFLOWER

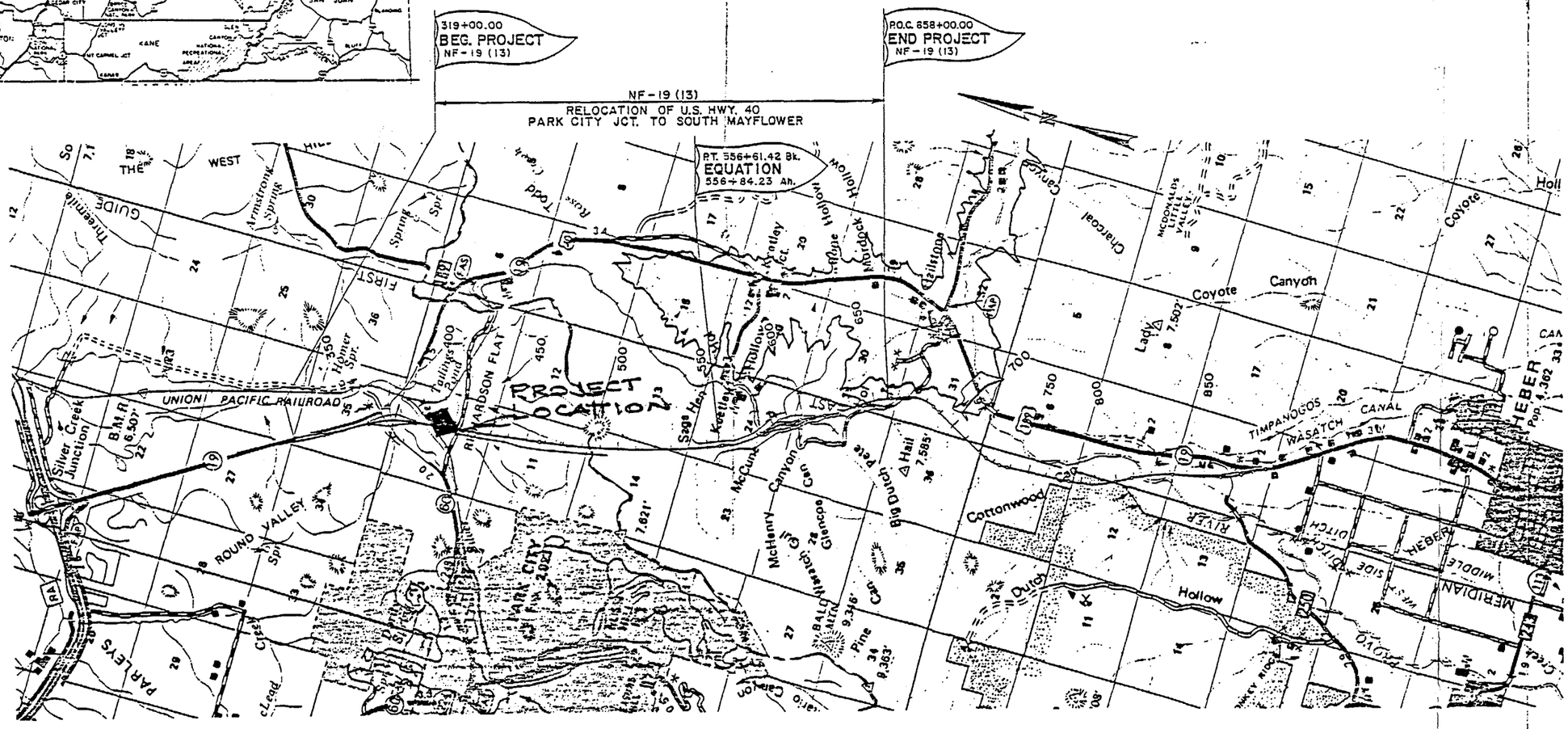
UTAH
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED STATE ROAD

NF-19 (13)

RELOCATION OF U.S. HWY. 40
PARK CITY JCT. TO SOUTH MAYFLOWER
SUMMIT COUNTY AND WASATCH COUNTY
GRADING, DRAINAGE, STRUCTURES
AND SIGNING
LENGTH 6.416 MILES

FOR INDEX TO SHEETS
SEE SHEET NO. 1-A



UTAH DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL _____ 19

CHIEF, ROADWAY DESIGN

RECOMMENDED FOR APPROVAL _____ 19

ENGINEER FOR PRECONSTRUCTION

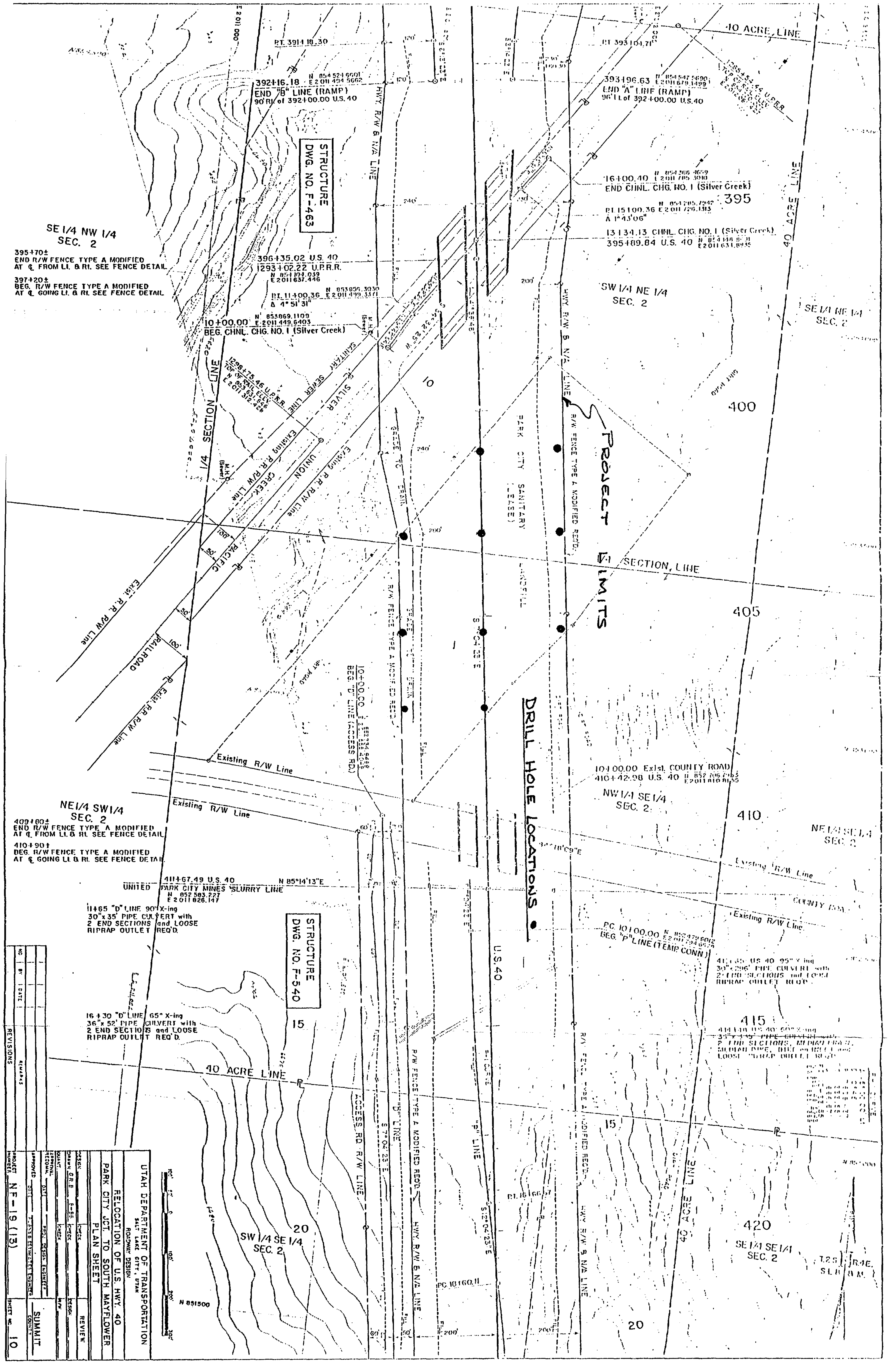
APPROVED _____ 19

ASSISTANT DIRECTOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

APPROVED

DIVISION ADMINISTRATOR DATE



40 ACRE LINE
PT. 391+18.30
392+16.18 N 854 521.6601 E 2 011 494.5662
END "B" LINE (RAMP)
90' Rt. of 392+00.00 U.S. 40
393+96.63 N 854 547.5690 E 2011 679.1499
END "A" LINE (RAMP)
96' Lt. of 392+00.00 U.S. 40
PT 393+04.71
STRUCTURE DWG. NO. F-463
HWY. R/W & N/A LINE
SE 1/4 NW 1/4
SEC. 2
395+70±
END R/W FENCE TYPE A MODIFIED
AT ℄ FROM Lt. & Rt. SEE FENCE DETAIL
397+20±
BEG. R/W FENCE TYPE A MODIFIED
AT ℄ GOING Lt. & Rt. SEE FENCE DETAIL
16+00.40
END CHNL. CHG. NO. 1 (Silver Creek)
395
PI. 15+00.36
Δ 1°43'06"
13+34.13 CHNL. CHG. NO. 1 (Silver Creek)
395+89.84 U.S. 40
396+35.02 U.S. 40
1293+02.22 U.P.R.R.
N 854 104.039 E 2 011 637.446
PI. 11+00.36 N 853 856.3030 E 2 011 499.3371
Δ 4° 51' 31"
10+00.00 N 853869.1109 E 2011 449.6403
BEG. CHNL. CHG. NO. 1 (Silver Creek)
SW 1/4 NE 1/4
SEC. 2
SE 1/4 NE 1/4
SEC. 2
1298+75.46 U.P.R.R.
TOP OF RAIL ELEV.
N 853 631.646
E 2 011 312.428
SANITARY SEWER LINE
SILVER CREEK
UNION PACIFIC RAILROAD
Existing R.R. R/W Line
Exist. R.R. R/W Line
1/4 SECTION LINE
M.H. (Sewer)
10
400
PROJECT LIMITS
PARK CITY SANITARY (LEASE)
LANDFILL
R/W FENCE TYPE A MODIFIED REQ'D.
SECTION LINE
405
DRILL HOLE LOCATIONS ●
10+00.00
BEG. "D" LINE (ACCESS RD.)
Existing R/W Line
10+00.00 Exist. COUNTY ROAD
410+42.98 U.S. 40
NW 1/4 SE 1/4
SEC. 2
410
NE 1/4 SE 1/4
SEC. 2
NE 1/4 SW 1/4
SEC. 2
409+80±
END R/W FENCE TYPE A MODIFIED
AT ℄ FROM Lt. & Rt. SEE FENCE DETAIL
410+90±
BEG. R/W FENCE TYPE A MODIFIED
AT ℄ GOING Lt. & Rt. SEE FENCE DETAIL
411+67.49 U.S. 40
N 85°14'13"E
UNITED PARK CITY MINES SLURRY LINE
N 852 583.227
E 2 011 826.147
COUNTY RD.
PC. 10+00.00
BEG. "P" LINE (TEMP CONN.)
11+65 "D" LINE 90° X-ing
30"x 35' PIPE CULVERT with
2 END SECTIONS and LOOSE
RIPRAP OUTLET REQ'D.
STRUCTURE DWG. NO. F-540
U.S. 40
16+30 "D" LINE 65° X-ing
36"x 52' PIPE CULVERT with
2 END SECTIONS and LOOSE
RIPRAP OUTLET REQ'D.
15
415
ACCESS RD. R/W LINE
"D" LINE
S 7°04'23"E
"P" LINE
S 12°04'23"E
R/W FENCE TYPE A MODIFIED REQ'D.
HWY. R/W & N/A LINE
40 ACRE LINE
PI. 16+66.57
PC 10+60.11
20
SW 1/4 SE 1/4
SEC. 2
420
SE 1/4 SE 1/4
SEC. 2
T.2S. R.4E.
S.L.B. & M.
N 851500
REVISIONS
NO. BY DATE REMARKS
UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
ROADWAY DESIGN
RELOCATION OF U.S. HWY. 40
PARK CITY JCT. TO SOUTH MAYFLOWER
PLAN SHEET
DESIGN CHECK
DRAWN G.R.B. CHECK
REVIEW
PROJECT NUMBER NF-19 (13)
SUMMIT COUNTY
SHEET NO. 10

Response of United Park City Mines Company, 01/15/88

QUESTION 17

List each insurance company or other person that provided casuality or pollution liability insurance coverage, including but not limited to any Comprehensive General Liability coverage, Environmental Impairment coverage, Insurance Services Office coverage, Umbrella coverage, or any other indemnification or defense agreement, that provides to you or any other person or entity identified in response to question 5 a right of indemnification or defense in any action involving hazardous substances. This question applies to policies or agreements that are or were in effect at any time to the present. Submit copies of all insurance policies or agreements identified.

RESPONSE

As of the date of this response, United Park City Mines Company has not completed a review of its insurance policies and applicable agreements. To the extent of the review thus far completed, it does not appear that the most recent of United Park City Mines Company's casuality insurance policies provide pollution, environmental impairment or "clean-up" coverage to itself or those entities identified in question 5. United Park City Mines Company will supplement this response, if appropriate, upon completion of its review.

United Park City Mines Company reserves the right to supplement this response as additional information and documents become available.

RESPONSE

OF

CONFIDENTIAL

UNITED PARK CITY MINES COMPANY

TO

QUESTIONS 10 THROUGH 19

OF

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY'S

NOVEMBER 23, 1987,

REQUEST FOR INFORMATION

Volume 2

Submitted: January 15, 1988

United Park City Mines Company reserves the right to supplement this response as additional information and documents become available.